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CARTHAGINIAN COINAGE IN PERSPECTIVE

(PLATES 1–4) PAOLO VISONÀ

Less than thirty years ago the standard reference on Punic coins was L. Müller's *Numismatique de l'ancienne Afrique*, a monograph published between 1860 and 1874, and based almost exclusively on considerations of style. Müller's systematic treatment of Punic issues struck in different metals provided a framework for all subsequent research on this coinage. His catalogue of Punic coin types and their varieties, assembled from numerous public and private collections (many of which are no longer extant), is still remarkably useful. Yet, lack of reliable information on the distribution of coin finds and the composition of hoards forced Müller to admit that "Jusqu'à ce que des renseignements exacts soient publiés sur les monnaies carthaginoises que l'on déterre constamment dans les différent pays, et que de nouvelles trouvailles de grand dépots de ces monnaies, faites en différent lieux, viennent à l'aide de la science, il vaudra sans doute mieux s'abstenir de faire une division géographique." [1] These difficulties prevented him from attributing most Punic series to mints other than Carthage.

* An earlier version of this paper was presented at the international symposium *Carthage Re-Explored* held at the Cincinnati Art Museum in 1990. The abbreviations used are Jenkins and Lewis = G. K. Jenkins and R. B. Lewis, *Carthaginian Gold and Electrum Coins* (London, 1963); *SNGCop* = G. K. Jenkins (ed.), *Sylloge Nummorum Graecorum Copenhagen* fasc. 42. *North Africa Syrtica-Mauretania* (Copenhagen, 1969).

[1] L. Müller, *Numismatique de l'ancienne Afrique*, vol. 2 (Copenhagen, 1861), p. 74; cf. pp. 72, notes 2–3, and 73, notes 108–9. Müller had only second-hand knowledge

Even though stylistic analysis has remained very valuable for identifying the general origin of coins bearing similar types, only the systematic publication of provenanced collections, coin hoards, and site finds since the 1960s has shown conclusively that different mints were active within the territories controlled by Carthage. In particular, excavations at sites such as Carthage and Kerkouane (Tunisia), [2] Sabratha (Libya), [3] Heraclea Minoa, Lilybaion, Monte Iato, Monte Adranone, Morgantina, Segesta, Selinus, and Solus (Sicily), [4] Antas

of coin finds and was apparently unaware of the data provided by eighteenth and nineteenth century travellers to North Africa: see L. Müller, "Sulle monete dell'impero cartaginese che si trovano in Sardegna," *Bullettino Archeologico Sardo* 10, 4 (1864), pp. 40–43; cf. D. Bateson, I. Campbell, and P. Visonà, "The Early Nineteenth-Century Jackson Collection of Coins from Carthage," *NC* 150 (1990), p. 148, nos. 18–19; P. Visonà, "Carthage. A Numismatic Bibliography," *Studi di Egittologia e di Antichità Puniche* 13 (1994), p. 141, no. 74, and "La numismatique *partim* Occident," in V. Krings (ed.), *La civilisation phénicienne et punique. Manuel de recherche* (Leiden-New York-Köln, 1995), p. 166.

[2] Visonà, "Carthage," (above, n. 1), p. 131-47, 219. For coin finds at Kerkouane see M. H. Fantar, *Kerkouane. Cité Punique du Cap Bon (Tunisie)* (Tunis, 1986), vol. 3, pp. 535–40; H. Gallet de Santerre and L. Slim, *Recherches sur les nécropoles puniques de Kerkouane* (Tunis, 1983), pp. 28–29, 33–34, and 36–37. The coins from the excavations at Bulla Regia and Chemtou will be published by H. R. Baldus.

[3] S. Garraffo, "Le monete," in E. Joly and F. Tomasello (eds.), *Il tempio a divinità ignota di Sabratha*, Monografie di Archeologia Libica 18 (Rome, 1984), pp. 168–69; G. K. Jenkins, "Coins from the Excavations," in P. M. Kenrick (ed.), *Excavations at Sabratha 1948–1951*, JRS Monograph 2 (London, 1986), pp. 247–53.

[4] See A. Cutroni Tusa, in *NScavAnt* 91 (1966), pp. 348–52 and 96 (1971), pp. 763–67; S. Frey-Kupper, "Note preliminari sul materiale numismatico proveniente dalla necropoli punica di Lilybaeum (1987–1991)," *Seconde Giornate Internazionali di Studi sull' Area Elima*, (Gibellina, 22–26 ottobre 1994) *Atti* (Pisa-Gibellina 1997), pp. 711–28; G. Fiorentini, "Santuari punici a Monte Adranone di Sambuca di Sicilia," in *Miscellanea in onore di Eugenio Manni* (Rome, 1980), pp. 907–15; "Ricerche archeologiche nella Sicilia centro-meridionale," *Kokalos* 26–27 (1980–81), p. 582; P. Visonà in T. V. Buttrey *et al.* (eds.) *AnnaliSNPisa* 25, 4 (1995), pp. 1204–60; *The Coins*, Morgantina Studies 2 (Princeton, 1989), pp. 112–14, nos. 431–48; L. Gandolfo, G. Mammina, *ibidem*, pp. 1260–95; A Cutroni Tusa, *AIIN* 2 (1955), p. 194; 3 (1956), pp. 223–24; 4 (1957), pp. 201–3; 5–6 (1958–59), pp. 306–17; 9–11 (1962–64), p. 274; 15 (1968), pp. 192–216; G. V. Gentili, *AIIN* 5–6 (1958–59), p. 294. The Punic coins found in the Swiss excavations at Monte Iato since 1971 are being prepared for publication by S. Frey-Kupper.

and Tharros (Sardinia), [5] have yielded a substantial number of Punic coins. Several new hoards have also been added to those listed in the 1973 *Inventory of Greek Coin Hoards*. [6] This new evidence consists of gold, electrum, silver, billon, and bronze issues which exemplify the types of coin used by the Carthaginians in their domains until the Roman conquest. Moreover, the study of die sequences has provided evidence for mint attribution and for assessing the volume of output of specific issues. [7] As a result, Punic coinage may now be viewed as

[5] E. Acquaro, "Le monete," in E. Acquaro *et al.*, *Ricerche puniche ad Antas*, Studi Semitici 30 (Rome, 1969), pp. 117–43; P. Visonà, "Carthaginian Bronze Coinage in Sardinia," in T. Hackens and G. Moucharte (eds.), *Numismatique et histoire économique phéniciennes et puniques. Actes du Colloque tenu à Louvain-La-Neuve, 13–16 Mai 1987*, Studia Phoenicia 9 (Louvain-La-Neuve, 1992), p. 131. See also E. Acquaro, in *RStudFenici* 16 (1988), pp. 208–9 and 213; L.-I. Manfredi, "Le monete puniche di Tharros," *Quaderni Soprintendenza Archeologica per le Province di Cagliari e Oristano*, 4, 1 (1987), pp. 181–88, and *RStudFenici* 17 (1989), pp. 301–5; 22 (1994), pp. 255–56.

[6] See E. Acquaro, *BollNum* 9 (1987), pp. 29–141; J. Alexandropoulos, *Semitica* 38 (1988), pp. 9–13; C. Alfaro Asins and C. Marcos Alonso, *ArchEspArq* 67 (1994), pp. 229–44; T. V. Buttrey, *NumAntClas* 9 (1980), pp. 137–43; A. Burnett, *SNR* 62 (1983), pp. 5–45; I. Carradice and S. La Niece, *NC* 148 (1988), pp. 33–52; A. M. Costa, *RStudFenici* 9, Suppl. (1981), pp. 49–58 (a genuine hoard? see p. 50, n. 3); F. Guido in R. Martini and N. Vismara (eds.), *Ermanno A. Arslan Studia Dicata* (Milan, 1991), vol. 1, pp. 97–108; G. K. Jenkins, *RStudFenici* 11, Suppl. (1983), pp. 19–36; G. Manganaro, *JNG* 31–32 (1981–82), pp. 39–54; I. Mirnik, in *Vjesnik Arheoloskog Muzeja u Zagrebu* 3, 15 (1982), pp. 149–65, and 3, 20 (1987), pp. 49–61; I. Mirnik in T. Hackens *et al.* (eds.), *Proceedings of the XIth International Numismatic Congress* (Louvain-La-Neuve, 1993), vol. 1, pp. 113–16; L. Villaronga in S. Scheers (ed.), *Studia Paulo Naster Oblata* (Leuven, 1982), vol. 1, pp. 129–35, and in *NC* 149 (1989), pp. 149–62; P. Visonà, *RStudFenici* 18 (1990), pp. 169–92; A. S. Walker in A. Houghton *et al.* (eds.), *Studies in Honor of Leo Mildenberg* (Wetteren, 1984), pp. 269–88. See also *Coin Hoards* 4 (1978), no. 45, and 8 (1994), no. 288.

[7] See G. K. Jenkins, "Coins of Punic Sicily, Part 1," *SNR* 50 (1971), pp. 25-78; "Coins of Punic Sicily, Part 2," *SNR* 53 (1974), pp. 23-41; "Coins of Punic Sicily, Part 3," *SNR* 56 (1977), pp. 5–65; "Coins of Punic Sicily, Part 4," *SNR* 57 (1978), pp. 5–68; A. M. Burnett, "The coinage of Punic Sicily during the Hannibalic war," in M. Caccamo Caltabiano (ed.), *La Sicilia tra l'Egitto e Roma. La monetazione siracusana dell'età di Ierone II, Atti del Seminario di Studi Messina 2–4 Dicembre 1993*, Atti Accademia Peloritana dei Pericolanti 69 Suppl. 1, 1993 (Messina, 1995), pp. 383–99.

the product of distinctive North African, Sicilian, Sardinian, Spanish, and South Italian coinage systems.

This essay reconstructs the development of the coinage minted under the direct authority of Carthage in the central Mediterranean from the late fifth to the mid second centuries B.C., and discusses the characteristics of each Carthaginian issue.

The Late Fifth and Fourth Centuries B.C.

Although the use of coined money began relatively late in the Carthaginian homeland, which was virtually without coinage (even foreign) until the fourth century B.C., lack of experiment with this medium of exchange does not imply lack of familiarity with it. The Carthaginians had undoubtedly been aware of the coinages minted by the Phoenician cities in the eastern Mediterranean, the Greek cities in Cyrenaica, and the Punic and Greek cities in Sicily, long before they adopted a coinage of their own.[8] Thus it is significant that the earliest silver coins struck under the authority of Carthage from ca. 410 to 390 consist of tetradrachms of Attic weight, which could only be used for relatively large payments and were intended for circulation in Sicily, as shown by the concentration of hoards (Plate 1, 1).[9] Paradoxically, the need to pay for military expenditure rather than commercial considerations may have provided the strongest stimulus for the adoption of coinage by this mercantile state.[10] Only 12 obverse and 42 reverse dies have been recorded for the earliest series of tetradrachms, but at least 159 obverse and 406 reverse dies were

[8] For Carthaginian trade see W. Huss, *Geschichte der Karthager* (München, 1985), p. 486; M. H. Fantar, *Carthage. Approche d'une civilisation* (Tunis, 1993), vol. 1, pp. 309–28. Cf. D. Berges, "Siegel aus Karthago—Spiegelbilder des Lebens. Die Tonsiegel aus dem Archiv eines punischen Tempels," in *Antike Welt* 28, 5 (1997), pp. 407–14.

[9] C. M. Kraay, "Greek Coinage and War," in W. Heckel and R. Sullivan (eds.), *Ancient Coins of the Graeco-Roman World. The Nickle Numismatic Papers* (Waterloo, Ontario, 1984), pp. 6–7; C. J. Howgego, "Why Did Ancient States Strike Coins," *NC* 150 (1990), pp. 7–9.

[10] W. Ameling, *Karthago. Studien zu Militär, Staat und Gesellschaft* (München, 1993), pp. 265–66.

used by Punic mints in Sicily for the striking of this denomination until ca. 290 B.C. [11] Two groups of gold shekels with free horse/palm tree and female head/free horse respectively, known by very few examples, were also struck either at Carthage or in Sicily in the first half of the fourth century. [12]

Even if it is doubtful that silver and gold were first minted at Carthage rather than by a Carthaginian mint in Sicily, [13] no Punic tetradrachms or early Punic gold currency have been found in North Africa thus far. There is evidence, however, that Punic bronze coins circulated in quantity at Carthage as well as in Sicily and Sardinia by the late fourth century B.C. Current research suggests that the Punic issue with male head wearing corn ear and earring/free horse, which was previously dated after ca. 345, may have been introduced in the second quarter of the fourth century (2–3). Several specimens of these coins were overstruck by Entella and Hipana in Sicily before ca. 345, and their types are related stylistically to bronze coins of Motya (destroyed in 397 B.C.), Syracuse's gold 50-litrai minted in the early fourth century, and the earliest Carthaginian tetradrachms and gold issues. [14] Since these anepigraphic bronzes of ca. 6 g include small fractions of less than 1 g that have rarely been found outside North Africa, it is conceivable that they were originally struck at Car-

[11] See Jenkins, "Coins of Punic Sicily, Part 1" (above, n. 7), pp. 42–60, 70–71; "Coins of Punic Sicily, Part 2" (above, n. 7), pp. 26–27; "Coins of Punic Sicily, Part 3" (above, n. 7), pp. 11–26; "Coins of Punic Sicily, Part 4" (above, n. 7), pp. 5–19.

[12] Jenkins and Lewis, pp. 18–19 (groups I-II). See also Jenkins, "Coins of Punic Sicily, Part 2" (above, n. 7), pp. 30–31.

[13] For this view see L. Mildenberg, "Punic Coinage on the Eve of the First War against Rome. A Reconsideration," in H. Devijver and E. Lipinski (eds.), *Punic Wars*, Orientalia Lovaniensia Analecta 33, Studia Phoenicia 10 (Leuven, 1989), pp. 6–8.

[14] For the overstrikings see S. Garraffo, in *AIIN* 25 (1978), pp. 31–32, and L.-I. Manfredi, *Riconiazione ed errori di conio nel mondo punico*, RStudFenici 18, Suppl. (Rome, 1990), pp. 195–200, 202. For comparanda with issues of Motya and Syracuse, see Jenkins, "Coins of Punic Sicily, Part 1" (above, n. 7), p. 74, nos. 13–14; D. Bérend, "Le monnayage d'or de Syracuse sous Denys I," in *La monetazione dell'età ionigiana. Atti dell'VIII Convegno del Centro Internazionale di Studi Numismatici - Napoli 29 maggio - 1 giugno 1983* (Rome, 1993), pp. 102–8, pls. 10–11.

thage.[15] Their output was enormous: in the Mqabba hoard from Malta, for instance, 259 obverse and 267 reverse dies have been recorded for 267 specimens.[16] These were the first Punic coins to circulate across the Carthaginian empire.

Financial exhaustion after a long period of warfare in Sicily, as well as the introduction of a large and overvalued bronze coinage at Syracuse under Dionysius I, may have prompted the Carthaginians to adopt a system of bronze units and fractions.[17] Finds of assemblages of these bronzes in late fourth century tombs at Carthage, Lilybaion, Cagliari, Nora, and Olbia indicate that they had the same value and function in all Carthaginian territories.[18] Punic gold and electrum coins also began to be hoarded in North Africa and Sardinia towards

[15] Carthage has yielded the largest concentration of both units and fractions: P. Visonà, "Punic and Greek Bronze Coins from Carthage," *AJA* 89 (1985), pp. 672–73. For the contrary view that this issue originated in Sicily see R. Calciati, "Monete puniche anepigrafi di bronzo circolanti in Sicilia. La serie testa virile / cavallo libero," *Rassegna di Studi del Civico Museo Archeologico e del Civico Gabinetto Numismatico di Milano* 41–42 (1988), pp. 9–23; V. Candellieri. *Monetazione punica: il tipo "testa di divinità / cavallino corrente od impennato"* (Milan, 1989), p. 39; A. Cutroni Tusa, "Riconsiderazioni e riflessioni sui rinvenimenti monetali a Morgantina," *AIIN* 38–41 (1994), pp. 209–21.

[16] Jenkins (above, n. 6), pp. 19, 22. The weights of these coins, all of which have bullet flans and are in very good condition, average 5.724 g.

[17] For the bronze coinage of Dionysius I, see C. Boehringer, "Zu Finanzpolitik und Münzprägung des Dionysios von Syrakus," in O. Morkholm and N. Waggoner (eds.), *Greek Numismatics and Archaeology. Essays in Honor of Margaret Thompson* (Wetteren, 1979), pp. 18–31; "Die Münzprägungen von Syrakus unter Dionysios: Geschichte und Stand der Numismatischen Forschung," in *La monetazione* (above, n. 14), pp. 80–81.

[18] See A.-L. Delattre in *CRAI* 1903, p. 29; *CRAI* 1905, pp. 484–85; *BCTH* 1905, p. 421. Cf. Frey-Kupper (above, n. 4), pp. 712 and 718 (tomb T. 13); A. Taramelli, "La necropoli punica di predio Ibba a S. Avendrace, Cagliari (Scavi del 1908)," *Monumenti antichi* 21 (1912), coll. 45–224; G. Patroni, "Nora colonia fenicia in Sardegna," *Monumenti antichi* 14 (1904), col. 187–228; D. Levi, "Le necropoli puniche di Olbia," *StudSard* 9 (1950), pp. 44–118 (tombs nos. 1, 3, 5, 10, 14, 17, 22, 26, 32, 35–37, 39–40, 43. See also L.-I. Manfredi, "Le monete delle necropoli," in R. D'Oriano *et al.* (eds.), *Contributi su Olbia Punica*, Sardò 6 (Sassari 1991), pp. 33–38; Visonà (above, n. 6), p. 171, n. 8.

the end of the fourth century. [19] Thus, despite the fact that Punic silver continued to be used exclusively as a military coinage in Sicily, by the second half of fourth century the Carthaginian economy was becoming increasingly monetized.

The quantity of gold coins minted by the Carthaginians in the last decades of the fourth century was unprecedented. An increase in foreign trade can hardly have been the immediate cause for the introduction of a system of five denominations in gold based upon a stater of ca. 9.40 g with head of Kore/horse standing r. (4), for which at least 88 obverse and 104 reverse dies have been recorded. [20] Since there is no evidence that these gold coins were used for commercial transactions, and Carthage was at peace in Sicily for more than twenty years after 339, it seems more plausible that this large mintage was connected with the resumption of hostilities with Syracuse after 317 B.C., as Leo Mildenberg has suggested. [21]

Although this coinage system was modified shortly before 300 B.C., when electrum shekels replaced gold staters (5) [22] it was maintained essentially intact until ca. 290. Moreover, the volume of currency produced by the Carthage mint between ca. 300 and 290 continued to be quite substantial. Despite the fact that the gold content of the shekels dropped from ca. 72% to 55-60%, at least 93 obverse and 107 reverse dies are known for this denomination. [23] After the end of the fourth century the Carthaginians generally struck gold coins only in emergencies. [24]

[19] Jenkins and Lewis, pp. 21, 61; Visonà (above, n. 5), p. 121, n. 1. Gold, electrum, or silver coins have been found very rarely in Punic tombs, and only at Carthage: cf. Visonà, "Carthage" (above, n. 1), p. 137, no. 58; p. 143, no. 81.

[20] Jenkins and Lewis, pp. 26–29, 44–45, and 70 (group III).

[21] Mildenberg (above, n. 13), pp. 10 and 12.

[22] Jenkins and Lewis, pp. 29–31 and 91–95 (group IV).

[23] Jenkins and Lewis, pp. 31–32 and 96–100 (group V).

[24] The only exception is represented by the gold staters and fractions minted by the Barcids in Spain before the Second Punic War: see L. Villaronga, *Las monedas hispano-cartaginesas* (Barcelona, 1973), pp. 114, 126–27, and 148–49; "Economia monetaria en la Península Ibérica ante la presencia cartaginesa durante la segunda guerra púnica," in G. del Olmo Lete and M. E. Aubet Semmler (eds.), *Los Fenicios en la Peninsula Ibérica* (Sabbadell, 1986), vol. 2, pp. 158–59.

Bronze, on the other hand, may have been minted in smaller quantity at Carthage in the last decades of the fourth century and is represented by a single issue of heavier weight with palm tree/horse's head, which was partly overstruck upon that with male head/free horse. [25] These coins have often been assigned to a Sicilian mint because their types and often crude style (6) resemble those of silver litrai that have been found only in Sicily and may belong to the late fourth century. [26] However, attribution to the metropolitan mint is supported by the close affinities in style of some varieties with the earliest Carthaginian gold and electrum fractions issued ca. 320–300 B.C. [27] Alternatively, it is conceivable that the bronzes with palm tree/horse's head were produced both by Carthage and by a Punic mint in Sicily, which could explain their different fabric and style.

While gold, electrum, and bronze coins were struck in North Africa, several Sicilian mints in the Punic zone (Lilybaion [?], ṢYṢ [= Panormus], RŠMLQRT, Thermai, and possibly Solus) contributed to the Carthaginian war effort by producing tetradrachms and fractional silver, supplemented by bronze issues, between ca. 350 and 300 (7–11). In contrast, only two Carthaginian minting authorities (identified as "the people of the army" and "the financial controllers"), were responsible for the last series of Siculo-Punic tetradrachms struck between ca. 300 and 289 (12–13). This would suggest that after most of the civic mints in the Carthaginian *epikrateia* ceased their activity at the end of the fourth century, the production of Punic currency in Sicily may have become highly centralized. The tetradrachms comprise a large military coinage for which at least 40 obverse and 120 reverse dies were used. [28] On the whole, the Carthaginians minted more precious metal currency during the conflict against Syracuse between ca. 317–289 than in any other period of warfare in the fifth and fourth centuries.

[25] *SNGCop* 102–6.
[26] *SNGCop* 74.
[27] Visonà (above, n. 6), pp. 185–88, n. 32.
[28] Jenkins, "Coins of Punic Sicily, Part 4" (above, n. 7), pp. 23–35.

Two series of uninscribed bronze coins can also be assigned to different Carthaginian mints in western Sicily between the late fourth and the early third centuries. Both site finds and hoards containing these bronzes are concentrated in Sicily. An issue with palm tree/Pegasus, including a unit and a half-piece of ca. 3 and 1.5 g respectively was struck ca. 330–300 (14–15). A lighter unit with head of Kore/horse before palm tree, weighing ca. 2.9 g, was struck in enormous numbers possibly between ca. 310 and 280, either at Lilybaion or at Selinus (16). The issue with palm tree/Pegasus is represented by two reverse varieties, with or without control marks, of which the variety with Pegasus facing left may have been minted in larger quantity. The issue with head of Kore/horse before palm tree is known by two obverse varieties of different style (with a necklace of pendants or with a plain necklace). Most coins of each variety do not have control marks, but those of simplified style may bear pellets (either single or in groups of 2 to 7) on the reverse. [29]

The Third Century B.C.

Carthaginian coinage entered a new phase after the wars against Agathokles. Although a sizable group of electrum shekels known by 32 obverse and 33 reverse dies (for the most part not representing a continuous sequence) was struck at Carthage ca. 270, after a long break in minting, their gold content had sunk to about 45%. [30]

[29] The excavations at Selinus from 1956 to 1967 have yielded 33 specimens with palm tree/Pegasus vs. 430 specimens with head of Kore/horse before palm tree: cf. A. Cutroni Tusa, in *AIIN* 4 (1957), pp. 201–3; *AIIN* 5–6 (1958–59), pp. 306–17; *AIIN* 9–11 (1961–64), p. 274; *AIIN* 15 (1968), pp. 192–216. The issue with palm tree/Pegasus 1. includes coins bearing an alphabetical letter, a pellet and an alphabetical letter, or a triangle of 3 pellets as control marks. At least 18 reverse varieties bearing pellets as control marks have been recorded for the issue with head of Kore wearing plain necklace/horse before palm tree: see Jenkins and Lewis, pp. 132–33; *SNGCop* 117; E. Acquaro, *Le monete puniche del Museo Nazionale di Cagliari* (Rome, 1974), nos. 325 and 355; Buttrey (above, n. 6), p. 139, fig. 6; Visonà (above, n. 6), pp. 188–90.

[30] Jenkins and Lewis, pp. 31–33 and 101–4 (group VI). For this dating see H. R. Baldus, "Unerkannte Reflexe der römischen Nordafrika-Expedition von 256/255 v. Chr. in der kartagischen Münzprägung," *Chiron* 12 (1982), p. 168.

Another group of shekels with the same gold content, for which at least 28 pairs of dies have been recorded, was issued at the beginning of the First Punic War together with an unknown quantity of silver shekels (17) and 3/4 shekels. [31]

Bronze coins of larger format and heavier weight were also introduced in the early third century. Since bronzes minted after ca. 300 have generally not been found in hoards together with earlier issues, a new coinage system may have been adopted, possibly as a consequence of prolonged warfare and of an increase in the value of bronze. The main bronze issue struck between ca. 300 and the beginning of the First Punic War bears a head of Kore on the obverse and a horse's head on the reverse, and is represented by two series including three and six groups of coins respectively. Both series must have been minted in close succession because their coins have similar weights (ca. 5–5.5 g) and share some control marks, but the different style of these bronzes suggests that they were produced by two mints. [32]

The coins in the smaller series (*SNGCop* 144–53) bear a distinctive head of Kore with a necklace of pendants on the obverse and were struck either by Carthage or by a Punic mint in Sicily (18) ca. 300–290. They include varieties without control marks, with alphabetical letter in the r. field on the reverse, and with symbol in the r. field on the reverse (pellet with rays, disk with rays, pellet in crescent, and triangle of 3 pellets). In contrast, the coins in the larger series bear a head of Kore with a plain necklace and are linked by their simplified style to a Sardinian issue of larger module with the same types (cf. 19–20). [33] The latter series (*SNGCop* 154–78) comprises varieties

[31] Jenkins and Lewis, pp. 33–34 and 106 (group VII). For the 3/4 shekel see G. K. Jenkins, "Varia Punica," in A. Houghton *et al.* (eds.), *Studies in Honor of Leo Mildenberg* (above, n. 6), p. 129; see also Baldus (above, n. 30), pp. 168–69, 186–87, pl. 1, nos. 2 and 5. Baldus believes that the 3/4 shekels (*SNGCop* 143, listed as a 2/3 shekel) were minted ca. 256/255, but in my view these coins are more closely related in style to the electrum and silver shekels issued at the beginning of the war.

[32] Jenkins and Lewis, p. 134.

[33] This issue (*SNGCop* 192–201) ranges in weight between 14 and 16 g and includes a) coins without control marks; b) coins with alphabetical letter(s) in the r. field on the reverse; c) coins with control marks on the reverse (pellet, palm tree, ears of corn, star, caduceus, star and caduceus, star and two caducei); d) coins with

without control marks, with alphabetical letter in the r. field on the reverse, with pellet in crescent, or with pellet in crescent and alphabetical letter, with globule or pellet, or globule and pellet in different combinations, with palm tree, or palm tree and pellet in different combinations, and with triangle of 3 pellets, or triangle of 3 pellets and alphabetical letter or palm tree. A single reverse variety bears a caduceus in the r. field. The stylistic diversity and wider range of control marks of these bronzes would suggest that they were struck over a longer period of time (ca. 290–260), presumably in Sardinia. By the beginning of the third century the Carthaginian state relied on the metropolitan mint and on satellite mints in western Sicily and Sardinia for its precious metal currency and bronze coin. It is uncertain, though, whether Punic bronze coins continued to be minted in Sicily until or after 264 B.C.

The need to provide a steady supply of bronze coinage to Carthage's farflung empire in time of warfare may have favored the choice of a heavily fortified Carthaginian dependency such as Sardinia for minting on a large scale.[34] In addition to the small bronzes with head of Kore/horse's head, whose production was discontinued ca. 260, most of the bronze coins struck under the authority of Carthage during the First Punic War came this island, which was not directly threatened by Roman attacks until 259. A new issue of ca. 7.5 g with head of Kore/horse standing r. (*SNGCop* 202–215) was introduced possibly after the start of the war, and includes at least five varieties (without control marks, with alphabetical letter[s] beneath the horse, with alphabetical letter[s] in the r. field before the horse, with pellet, or pellet and alphabetical letter, and with caduceus) which may have been struck until ca. 250 B.C., since the obverse style of some of them resembles that of Carthaginian coins minted after 256/255 (cf.

control mark on the obverse (pellet in crescent, triangle of 3 pellets) and symbol (caduceus, star and caduceus) or alphabetical letter on the reverse. Cf. L.-I. Manfredi, *Le monete della Sardegna punica*, Sardò 1 (Sassari, 1987), pp. 22–23 and 26–29.

[34] Visonà (above, n. 5), pp. 123–24; L.-I. Manfredi and M. T. Francisi, "Le monete puniche in Sardegna: Nuovi dati e riletture," in G. Pisano (ed.), *Nuove ricerche puniche in Sardegna,* Studia Punica 11 (Rome, 1996), pp. 32–37.

Plate 2, 21 and 27–29). [35] Finds of the heavy bronzes with head of Kore/horse's head, and of the coins with head of Kore/horse standing r. are concentrated in northwestern and southwestern Sardinia respectively, but have also been reported from Sicily and North Africa. Since the bronze coinage produced by the rebels during the Libyan War was almost entirely overstruck upon these two Sardinian issues, it is clear that Carthage did not mint any major series of bronze coins between 264 and 241. [36]

Five other Punic bronze issues were struck by uncertain mints in the first half of the third century B.C. and have been found thus far more frequently in North Africa than in Sicily or Sardinia. An issue with palm tree/horse standing r. with head reverted may have been minted at Carthage itself, since its types and style resemble those of the earliest Carthaginian gold and electrum fractions (22). Two issues with head of Kore/horse before palm tree and alphabetical letter or caduceus, and head of Kore/horse's head are similar in style to the bronzes minted in Sardinia ca. 290–260 (23–24). An issue with male head between corn ears/free horse was almost entirely overstruck on the Siculo-Punic bronzes with head of Kore/horse before palm tree (25), and is also known to have been overstruck upon a bronze of Carthaginian or Sicilian mintage with head of Kore/horse's head. The heaviest issue (ca. 6.5 g) is represented by coins of larger module with palm tree/horse before caduceus with or without a pellet in the field, which seem to have been struck with adjusted dies (26). [37]

[35] Some specimens are overstruck on the issue with head of Kore/horse's head r.: cf. *SNGCop* 214 and Costa (above, n. 6), p. 51, no. 21.

[36] Carradice and La Niece (above, n. 6), pp. 34–39 and 45. For the distribution of finds of these issues in Sardinia see Manfredi and Francisi (above, n. 34), pp. 42–43, figs. 7–8. No hoards of these bronzes are known outside Sardinia. Only 10 specimens have been found in the excavations at Selinus (1956–67), 3 in the excavations at Morgantina (1955–63, 1966–71, 1980–81), and none in the excavations at Monte Iato (1971–90). *IGCH* 2294 (from Libya) is not a hoard: see A. Di Vita, *La villa della "Gara delle Nereidi"* presso Tagiura: *Un Contributo alla Storia del Mosaico Romano ed altri Recenti Scavi e Scoperte in Tripolitania*, LibyaAnt 2, suppl. (Tripoli, 1966), p. 80.

[37] *SNGCop* 126, 124, 220–23, 224, 120. A reverse variety of *SNGCop* 126 in the British Museum (inv. no. 1908–11–11 76) bears an alphabetical letter as a control mark; cf. also H. E. Mathiesen (ed.), *SNG Aarhus University Denmark* (Copenhagen,

Carthage struck mostly coins in precious metal during the First Punic War. After the minting of electrum and silver ca. 264, a massive quantity of currency was produced in 256/255, in connection with the Roman expedition against North Africa. Silver 3-shekel pieces and two issues of heavy gold coins of 12.5 and 25 g (equivalent to 20 and 40 silver shekels and known by 6 obverse and 22 reverse dies, and one pair of dies respectively) were minted at Carthage (27–28). Both silver and electrum multiples of the shekel were issued in Sicily, including at least 2 obverse and 8 reverse dies for the electrum 3-shekel pieces, and 12 obverse and 21 reverse dies for large silver denominations of 5, 6, and 3 shekels each. [38] Between 255 and 241 Carthage also struck two consecutive issues of light 1½ electrum shekels with head of Kore/horse standing r. and sun disk. These coins had a different gold content (45–49% vs. 34–36%) and include at least 38 pairs of dies and 44 obverse and 43 reverse dies respectively (29–30). However, despite the fact that the total amount of currency minted by Carthage throughout the conflict far exceeded that issued by Rome, the Carthaginians were unable to bring about their enemies' defeat. [39]

1986), 1098. The issue with male head between corn ears/free horse (*SNGCop* 120) was also overstruck upon bronzes with head of Kore/horse before palm tree and caduceus (*SNGCop* 222): see Visonà (above, n. 6), p. 191, nn. 45–46. For a tomb at Carthage which yielded a bronze with palm tree/horse before caduceus (*SNGCop* 124) and 2 Sardinian bronzes (*SNGCop* 192) see Visonà, "Carthage" (above, n. 1), pp. 135–36, no. 56.

[38] For the gold see Jenkins and Lewis, pp. 37–39 and 108–110 (group IX); H. R. Baldus, "Zwei Deutungsvorschläge zur punischen Goldprägung im mittleren 3. Jahrhundert v. Chr.," *Chiron* 18 (1988), pp. 171–76; for the electrum and silver see Jenkins and Lewis, pp. 35–36 and 107 (group VIII); Jenkins, "Coins of Punic Sicily, Part 4" (above, n. 7), pp. 36–42; Baldus (above, n. 30), pp. 169–70.

[39] Jenkins and Lewis, pp. 40-42 and 111–15 (group X); cf. L. Cancio, "Una falsificación peligrosa," *GacNum* 51 (December 1978), pp. 54–57. The electrum issue with a higher gold content (Jenkins and Lewis group Xa) may have been struck until ca. 251 B.C.: see Baldus (above, n. 30), p. 186. According to A. M. Burnett, "The Beginnings of Roman Coinage," *AIIN* 36 (1989), p. 45, "the statistics suggest that the amount of precious metal minted by Carthage during the First Punic War was about 70 times as great as that minted by Rome."

Only base silver coins were struck at Carthage after 255, mainly in denominations of 1 and 2 shekels (31). [40] The size of this coinage cannot be estimated at present, partly because much of it was overstruck by the Libyan rebels during the war of 241–238, but it appears to have been substantial. [41] An exceptional electrum issue whose types reproduce those of the gold coins of 12.5 g, known by 2 obverse dies, may also have been minted at Carthage just before the rebellion began. [42]

It is still unclear how Carthaginian bronze coinage was affected by the steady decline in the quality of the silver currency towards the end of the war. Rising inflation in Sardinia would explain the overstriking of the large bronzes with head of Kore/horse's head by two issues with head of Kore/horse standing with head reverted, and head of Kore/horse before palm tree (32–33), whose types may have been inspired by those of Carthaginian electrum and silver coins minted between 256 and 241. These overstrikings where probably the last coins issued by Carthaginian authorities in Sardinia before the rebellion of the mercenaries in 240 B.C. which precipitated the Roman conquest of the island. [43] Unlike earlier Sardinian issues, they did not circulate in

[40] *SNGCop* 185–87. The range of denominations must have been broader: for rare 1 and 1/4 silver shekels minted at Carthage in this period, see Jenkins (above, n. 31), pp. 127–29; see also Jenkins and Lewis, p. 135, pl. 27, 5 (identified as a 3-drachm piece). A unique 3-shekel coin is dated ca. 255 B.C. by Baldus (above, n. 30), p. 185, pl. 1, 7 (Jenkins and Lewis, pl. 27, 4). Some base silver may have been struck in Sardinia during the First Punic War, see Jenkins (above, n. 31), p. 130, pl. 18, 5.

[41] Carradice and La Niece (above, n. 6), pp. 33 and 47–48.

[42] Jenkins and Lewis, pp. 38–39 and 110, nos. 402–3; Baldus (above, n. 38), pp. 176–79.

[43] Overstrikings similar to *SNGCop* 216–19 have been found associated in several hoards: see Manfredi and Francisi (above, n. 34), figs. 9–10. The earliest are probably those with head of Kore/horse standing r. or l., head reverted, which bear a value mark of uncertain interpretation: see Jenkins (above, n. 31), pp. 130–32. The issue with head of Kore/horse before palm tree comprises varieties with different control letters, and includes half pieces overstruck upon the Sardinian bronzes with head of Kore/horse r.: cf. Acquaro (above, n. 29), nos. 990–1022, 1516–17; E. Buffi Neri and C. Lanzoni, "Le monete puniche del Museo Archeologico Nazionale di Parma," *RStudFenici* 9, Suppl. (1981), p. 102, no. 4. The existence of an overstruck billon specimen similar to *SNGCop* 219 suggests that this group of overstrikings may

appreciable quantity in Sicily and North Africa and were not reused by the Libyan rebels.

Base silver and billon shekels and double shekels were struck at Carthage after the Libyan War, but their total output can hardly have been large at a time when Carthage was paying a heavy war indemnity to Rome, and the silver content of billon continued to decline (34). [44] Even the bronze coinage minted after 238 is not particularly abundant, and it includes some large denominations which must have been overvalued in relation to silver. After this, heavier bronze issues were minted by Carthage in times of crisis, while in Rome bronze coinage underwent incremental reductions in weight. At some point between ca. 237 and 230 a bronze issue with head of Kore/horse before palm tree, struck in a single denomination of ca. 15 g (35), may have replaced the billon double shekels bearing the same types. [45] A more substantial issue of bronze and billon coins in three denominations of ca. 24, 12, and 6 g began to be minted ca. 230 B.C., presumably after the last installment of the war indemnity was paid off; their types reproduce those of the electrum light 1 and ½ shekels issued from 255 to 241 (Plate 3, 36-38), and the unit of ca. 6 g may be a reduced billon shekel. [46] No hoards of these coins have yet been

be coeval to the billon issues with head of Kore/horse before palm tree minted by Carthage after 241 B.C.: cf. Jenkins (above, n. 31), p. 131, and pl. 18, 13, and Carradice and La Niece (above, n. 6), pp. 46–49.

[44] The base silver is known from the Bulla Regia hoard, buried ca. 230 B.C., which has been briefly discussed by H. R. Baldus, "Naravas und seine Reiter. Numismatische Zeugnisse numidischer Kavallerie im kartagischen Heer," in *Deutscher Numismatikertag München 1981. Vorträge* (München, 1983), p. 11, pl. 1, 7; pl. 2, 18–22; "Wankt die karthagische Münzchronologie des 3. Jahrhunderts v. Chr.?" *Chiron* 21 (1991), pp. 179–81. For the billon issues, see *SNGCop* 190–191. Even these base billon coins were reduced to mere bronze: see G. K. Jenkins, "Some Coins of Hannibal's Time," in *Studi per Laura Breglia*, BollNum 4, Suppl. (Rome, 1987), pp. 215–16, pl. 1, 3–4.

[45] *SNGCop* 253–54. The style of these bronzes resembles that of the billon and of the base silver coins from the Bulla Regia hoard.

[46] For the billon unit see *SNGCop* 261. The intermediate and large denominations (*SNGCop* 260, 255–59) may have been multiples of 2 and 4 shekels respectively: cf. Jenkins (above, n. 44), p. 216. All three denominations normally bear alphabetical letters as control marks (but cf. *SNGCop* 259: wreath and caduceus).

found, though, and the decade before the start of the Second Punic War seems to have been a time of reduced minting activity in North Africa.

Despite having gained access to new sources of precious metal in Spain under the Barcids, Carthage continued to have a coinage of base silver and bronze until the Second Punic War. Regional patterns of circulation also seem to have become predominant in the Carthaginian empire in the period between the first two Punic wars. The coins struck by Spanish mints from 237 to 206 are not usually found in North Africa, and very few specimens minted at Carthage between ca. 238 and 220 travelled overseas. [47]

A pivotal period in the history of Punic coinage was the Hannibalic War, during which a continuous series of coins in different metals was issued by the Carthage mint. Large denominations in precious metal were no longer struck. An issue of electrum 3/8 shekels with a 30% gold content, whose types imitate those of Roman quadrigati, was minted in uncertain quantity, presumably before ca. 212 B.C. (39). [48] Attribution of these coins to Carthage rather than to a Hannibalic mint in Italy has plausibly been suggested on account of their style and die alignment (a regular feature of Carthaginian currency since the end of the fourth century). [49] Another issue of electrum, a ⅜ shekel with the same gold content, bearing a head of Kore on the obverse and a horse standing or stepping r. on the reverse, may have been struck until the early 210s because of the wide stylistic variety of

SNGCop 269–72 may represent reduced bronze shekels.

[47] See M. P. Rossignani, "Ceramica e trovamenti vari," in M. Cagiano de Azevedo *et al.*, *Missione archeologica italiana a Malta. Rapporto preliminare della Campagna 1966* (Rome, 1967), p. 70 (one *SNGCop* 266). Cf. *IGCH* 2275, 2298 (one *SNGCop* 190 var.; one *SNGCop* 261–68, from the Tiber, is in Rome's Museo Nazionale Romano (one 103277); one *SNGCop* 268 from the excavations at Locri Epizephyrii in 1954–55 is in Reggio Calabria's Museo Archeologico Nazionale; one *SNGCop* 268 and one *SNGCop* 271 var. from the excavations at Ampurias in 1909 and 1912 are in Barcelona's Gabinete Numismatico de Catalunya (14413 and 13932).

[48] Jenkins and Lewis, pp. 48–50, 121 (group XVI).

[49] Jenkins (above, n. 44), pp. 223–24. See the remarks by P. Visonà, "Carthaginian Bronze Coinage in Southern Italy and Sicily during the Second Punic War," in I. Carradice *et al.* (eds.), *Proceedings of the 10th International Congress of Numismatics, London, September 1986* (Wetteren, 1989), p. 84, n. 4.

its types (40–41). More than 20 pairs of dies have been recorded for this issue. [50] The Carthage mint also produced a large quantity of silver quarter shekels with head of Kore/horse standing r. (42), which have turned up almost exclusively in south Italian hoards and represent subsidies sent to Hannibal after he invaded Bruttium in 215 B.C. [51]

Four issues of bronze coins of different weight were struck at Carthage in addition to this electrum and silver. The largest one includes coins of ca. 6–7 g with head of Kore/horse walking, standing, or stepping r. (43–45), which comprise nearly thirty groups. The variety with horse walking has close stylistic affinities with the billon and bronze issues minted ca. 230–220, and may already have been current at the beginning of the Second Punic War. Both varieties with horse standing and horse stepping, on the other hand, must have been introduced between 214 and 210, since they include several specimens overstruck ou Roman unciae minted in Sicily ca. 214-212, and on Syracusan bronzes of Hieron II and of the Third Democracy that were taken to Carthage as booty during the Sicilian expedition of 213–210 (46–48). [52] A heavy bronze issue of ca. 18–19 g with head of Kore/horse

[50] Jenkins and Lewis, pp. 48–49, 119–20 (group XV); Jenkins (above, n. 44), pp. 220–22. A new specimen from Carthage is listed by Bateson *et al.* (above, n. 1), p. 155, 24. The examples illustrated here (figs. 40–41) represent new pairs of dies.

[51] A group of 22 specimens struck from different obverse dies has been published by Jenkins (above, n. 44), pp. 226 and 230. Much of this currency may have been concealed by Hannibal's Brettian allies, as the presence of Brettian silver or bronze in several hoards would suggest (cf. *IGCH* 2014, 2019, 2021–23, 2027). The 1/4 shekels from Tiriolo described by L.-I. Manfredi, "Monete puniche a Tiriolo (CZ)," *RStudFenici* 177 (1989), pp. 55–59, were also minted at Carthage. In spite of their aberrant die axes, their fabric and style are consistent with those of Carthaginian silver and bronze issues of the Second Punic War period: see P. Visonà and F. Fazio in *BollNum* 21 (1993), pp. 112–14. Visonà (above, n. 49), p. 86, n. 17, has suggested that Hannibal's coinage in southern Italy may not have been substantial.

[52] Cf. *SNGCop* 302–6 (reverse horse walking), 307–23 (horse standing), 324-29 (horse stepping). A rare reverse variety with horse prancing l. (*SNGCop* 330) also belongs with this issue, *cf.* Baldus (above, n. 30), p. 172, n. 20: six examples are among the contents of the two Bejaïa hoards (*IGCH* 2296, listed as one hoard), and 1 specimen is in the collection of Tunis's Musée du Bardo (72.2.84). The Carthaginian overstrikings of Roman unciae have been read backwards by C. A. Hersh,

before palm tree is linked stylistically to the silver quarter shekels and belongs to the central years of the war (49–50); [53] another issue bearing similar types was struck in two denominations of ca. 6 and 12 g (51–52). [54] The fourth issue includes a unit of ca. 12 g with head of Kore/horse standing or stepping r. with head reverted, and may be dated between 210 and 202 on grounds of style (Plate 4, 53–54). [55]

This large coinage was minted for use in North Africa, where most site finds and hoards of Second Punic War bronzes are concentrated. [56] A small issue of light quarter shekels in electrum with a low gold content of 14%, and two rare billon issues may also have been struck for local circulation. [57] Thus, in effect, the Carthaginians shipped most of their electrum and silver currency overseas to pay for

"Overstrikes as Evidence for the History of Roman Republican Coinage," *NC* 110 (1953), p. 38, 5; "Some Additional Roman Overstrikes," *ANSMN* 32 (1987), p. 91, 8a.

[53] *SNGCop* 340–44. A billon (?) *SNGCop* 341 is in the collection of the American Numismatic Society (HSA 12007; 19.043 g).

[54] *SNGCop* 353–56.

[55] *SNGCop* 345–49. The perfunctory obverse style of these coins is similar to that of the gold, billon, and bronze issues minted at Carthage shortly before 202 B.C.: cf. *SNGCop* 347 and *SNGCop* 389 and 392–96. A rare issue with head of Kore/horse standing before standard (*SNGCop* 331) is also related to this group of bronzes by its weight (ca. 14–15 g) and obverse style.

[56] For the pattern of circulation of these coins in North Africa, cf. *IGCH* 2295-96; *Coin Hoards* 4 (1978), no. 45; C. Alfaro Asins, "Lote de monedas cartaginesas procedentes del dragado del puerto de Melilla," *Numisma* 43, 232 (1993), pp. 9–46. Only a few finds are known from Spain, Italy, Sicily, and Sardinia: see Alfaro Asins and Marcos Alonso (above, n. 4), pp. 22–32; C. Alfaro Asins, Monedas cartaginesas y norteafricanas halladas en Ampurias," *Huelva Arqueológica* 13, 2 (1994), pp. 175–201; E. Acquaro, "Monete puniche del Cuneese," *Annotazioni Numismatiche* 4, 16 (1994), p. 344; Jenkins (above, n. 44), p. 217; P. Visonà, "La monetazione annibalica in bronzo nel Bruzio," *Klearchos* 33–34, 129–36 (1991–92), pp. 150–51, n. 6; Visonà (above, n. 4), p. 151, no. 443; Visonà (above, n. 49), p. 87, n. 19; *IGCH* 2297–98.

[57] *SNGCop* 350 (electrum); 351–52 (billon). The electrum issue is known by 2 pairs of dies: Jenkins and Lewis, pp. 46 and 117 (group XIII). The Carthaginian bronzes with head of Kore/palm tree (above, n. 54) are closely related in style to this electrum and silver currency.

their military operations and employed a subsidiary coinage in Africa throughout the conflict.

An all-out effort to win the war was made between 213 and 210, when Carthage was financing an expeditionary force in Sicily and supporting Hannibal in Italy at the same time. Two silver issues with laureate male head/elephant and male head wreathed with corn ears/free horse were minted for the Carthaginian army on the island and were supplemented by a bronze coinage in three denominations with head of Demeter/free horse (55–57). The elephant issue was struck either at Carthage or in Sicily and includes shekels, halves, and rare quarter and eighth shekels, whereas the free horse issue was probably minted at Akragas and consists of half shekels, quarter shekels, and eighth shekels. The bronze coins may have been minted at Akragas or at Morgantina. On the whole, however, this coinage was not very extensive. [58]

Carthage also continued to ship money to Hannibal almost until he was forced to evacuate Bruttium. The style of some of the quarter shekels found in southern Italy is akin to that of two Carthaginian issues minted shortly before 202. One is a large issue of very base billon coins, which were soon reduced to bronze (58) and the other is represented by a group of gold quarter shekels known by at least four pairs of dies (59). [59] The strain on Carthaginian resources in the last years of the conflict apparently did not prevent the city from sending good silver to Bruttium, even though the silver currency struck for circulation in North Africa became utterly debased.

[58] See Burnett (above, n. 7), pp. 384–92. For the bronze coins see Visonà (above, n. 49), pp. 87–88; cf. also A. Cutroni Tusa, "Le ultime emissioni di Cartagine in Sicilia," *Atti del II Congresso Internazionale di Studi Fenici e Punici*, vol. 1 (Rome, 1991), pp. 271–79.

[59] *SNGCop* 390–96 (billon); 389 (gold). See also Jenkins and Lewis, pp. 47 and 118 (group XIV). For the stylistic affinities between some of the 1/4 shekels found in Bruttium and these billon and gold issues, which have been found associated in a large hoard buried at El Jem (Tunisia) in the last years of the war (*IGCH* 2300), see Jenkins (above, n. 31), pp. 134–35, pl. 19, 29–31a. Small bronze fractions (*SNGCop* 397–98) were also struck at Carthage concurrently with the billon.

The Second Century B.C.

The coinage system adopted by Carthage after ca. 200 was the product of a monetary reform as well as a consequence of her shattering defeat in the Second Punic War. Instead of reverting to a debased silver coinage similar to that struck after the Libyan War, the Carthage mint introduced two bronze issues of ca. 20 and 100 g possibly representing a unit and a multiple. The lighter coins bear a head of Kore on the obverse and a horse stepping r. on the reverse, whereas the heavier bronzes are known by two reverse varieties with a horse standing or stepping r. and a sun disk with uraei (60–62). Their homogeneous fabric and style show that they were struck concurrently, and there is evidence that they were hoarded together.[60] The larger denomination includes coins without control marks or with an alphabetical letter beneath the horse on the reverse, whereas nearly 40 reverse varieties have been recorded for the smaller denomination. But few obverse dies seem to have been used for these bronzes, and their stylistic uniformity may be indicative of an episode of large scale minting within a relatively short period of time. The discovery of numerous specimens of the lighter issue in extremely worn condition in the destruction stratum of 146 at Carthage indicates that they must have been minted in the early second century.[61]

[60] *SNGCop* 399–400, 409–13; cf. also E. S. G. Robinson, "Carthaginian and Other South Italian Coinages of the Second Punic War," *NC* 121 (1964), pp. 45–46, pl. 6, 1–2 (attributed to an Italian mint). For a Tunisian hoard containing examples of both issues see J. Alexandropoulos, "Note sur une trouvaille monétaire punique" *Semitica* 38 (1988), pp. 9–13; "Considérations sur les derniers monnayage de bronze de la Carthage punique," *BSFN* 44, 3 (1989), p. 534. The lighter issue is represented by the following reverse varieties: a) without control marks; b) with alphabetical letter; c) with pellet; d) with letter and pellet; e) with pellet on stroke; f) with letter and pellet on stroke; g) with pellet and pellet on stroke; h) with two strokes on two pellets; i) with Isiac symbol (cow horns); j) with crescent.

[61] H. R. Baldus, (cf. Livy 33.47.1–2). "Eine 'hannibalische' Tanit (?)," *Chiron* 18 (1988), pp. 7 and 9–10. In Baldus's view the obverse style of these issues is directly related to Hannibal's influence on Carthaginian politics after the Second Punic War. The monetary reform which produced this new coinage system would have been enacted before his fall from power in 195 B.C.

Since the Carthaginians were saddled with a staggering indemnity of 16,000 pounds of silver a year for 50 years (Pliny, *NH* 33.51), and no gold or silver coins were minted by Carthage immediately after the end of the Second Punic War, it is also plausible that these coins of large format were greatly overvalued. The adoption of a heavy bronze coinage on a Ptolemaic model would have offset the lack of any kind of currency and would have prevented the hoarding of precious metal. Except for rare fractions of similar style with head of Kore/horse's head, weighing ca. 4 g (63), no other bronze coins were struck before the destruction of the city. [62] Between ca. 200 and 146 the circulating medium at Carthage consisted mainly of these and of earlier bronze issues that perhaps were never demonetized. [63] Relatively few site finds of these coins have been reported outside North Africa. [64]

[62] Cf. Ph. Grierson and U. Westermark (eds.), O. Mørkholm, *Early Hellenistic Coinage from the Accession of Alexander to the Peace of Apamea (336–188 B.C.)* (Cambridge, 1991), pp. 10–11. For the bronze fraction with reverse horse's head see *SNGCop* 414. A barbarous imitation of the issue with reverse stepping horse is discussed by Alexandropoulos, "Note sur une trouvaille monétaire punique," (above, n. 60), pp. 10–11, and pl. 2, 6.

[63] For the coins found in a context of the first half of the second century B.C. at Carthtage see S. Lancel and J.-P. Thuillier, "Rapport préliminaire sur la campagne de 1976 (niveaux puniques)," in S. Lancel *et al* (eds.), *Mission archéologique française à Carthage Byrsa 1. Rapports préliminaires des fouilles (1974–1976)* (Rome, 1979), pp. 239 and 250.

[64] For a *SNGCop* 414 from Tharros see G. K. Jenkins, "Coins," in R. D. Barnett and C. Mendleson (eds.), *Tharros. A Catalogue of Material in the British Museum from Phoenician and Other Tombs at Tharros, Sardinia* (London, 1987), p. 150, no. 6/56. A *SNGCop* 409–13 from Corfinium is in Chieti's Museo Archeologico Nazionale: S. Pennestrì, "Monete greche da Corfinio," in I. Carradice *et al.* (eds.), *Proceedings of the 10th International Congress of Numismatics* (above, n. 48), pp. 5–6 (undescribed). Site finds from Spain and the Balearic Islands include one *SNGCop* 411 var. from Ampurias in the Gabinete Numismático de Catalunya (19273), one *SNGCop* 409 or 410 var. from Burriac (near Cabrera de Mar, Barcelona), possibly one *SNGCop* 409–13 and one *SNGCop* 414 from Ibiza: see P. P. Ripollés Alegre, *La Circulacion Monetaria en la Tarraconense Mediterranea* (Valencia, 1983), p. 71; p. 244, no. 18; p. 247, no. 71. A *SNGCop* 409–13 is in the collection of the Museo Arquéologico de Eivissa (1453) (information from M. Campo); a *SNGCop* 414 var. was also found in excavations at Puig des Molins (Ibiza) in 1982 (information from P. P. Ripollés Alegre). See also K. M. Edwards, *Corinth. Results of excavations*

A monetary *koiné* was established by the second quarter of the second century, after the city of Utica and the Kingdom of Numidia began minting heavy bronze coins on a standard similar to that of the Carthaginian units (?) with head of Kore/horse stepping r. Their bronzes circulated at Carthage and would have increased the supply of coinage available within her territory.[65] However, the fact that Carthage did not have any currency in precious metal for fifty years after ca. 200 B.C. suggests that the scope of her financial recovery was rather limited and casts doubt on Livy's story that Carthage offered to pay the balance of the war indemnity in 191.[66] The only silver and gold coins struck at Carthage in the second century belong to the years of the Third Punic War and comprise two issues with head of Kore/horse stepping r. whose weights are related to the standard of the shekel (64-66). But even this burst of minting activity must have been quite small, since each denomination was struck by a single obverse die, and the fineness of the metal attests to a situation of emergency.[67]

All Carthaginian currency disappears from the archaeological record after 146, presumably because it was melted down. Carthage's last bronze issues also seem to have been withdrawn from circulation after

conducted by the American School of Classical Studies at Athens. VI. Coins (1896–1929), (Cambridge, 1933), p. 74, no. 471 (*SNGCop* 409–13).

[65] Alexandropoulos, "Considérations" (above, n. 60), pp. 537–39; Baldus (above, n. 61), p. 9; cf. Visonà, "The Coins—1983," in J. H. Humphrey (ed.), *The Circus and a Byzantine Cemetery at Carthage* (Ann Arbor, 1988), vol. 1, p. 418, n. 4. For the bronze coinage of Numidia see D. Gerin, "Un trésor de monnaies numides trouvé à Cherchel (?) à la fin du XIX^{e} siècle," *Trésors monétaires* 11 (Paris, 1989), pp. 9–17.

[66] Livy, 36.4.7; 36.4.9.

[67] *SNGCop* 401–8; Jenkins and Lewis, pp. 53–54, 122–23 (group XVIII); cf. A. M. Burnett, "Africa," in A. M. Burnett and M. H. Crawford (eds.), *The Coinage of the Roman World in the Late Republic,* British Archaeological Reports International Series 326 (Oxford, 1987), pp. 175–76. A hoard of four double shekels similar to *SNGCop* 403–6 found in 1910 at Aouïna (Carthage, environs; not listed in *IGCH*), and two other specimens from Carthage and Thala are described by A. Merlin in *BCTH* 1916, p. ccv, n. 2. The only example of this issue found outside North Africa comes from the acropolis of Bovianum Vetus in Italy (information from G. De Benedittis, Campobasso).

the destruction of the city, for they are rarely found in North Africa in later contexts. [68] Many of these coins may have been seized as booty during the Third Punic War (to be reused by Roman soldiers, in lieu of Republican bronze?), and were eventually brought to the northern Adriatic region by the Roman army during the Illyrian campaigns in the late second and early first centuries B.C. [69]

LIST OF ILLUSTRATIONS

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3. Carthage mint, ca. 370–350. Æ 4.7 g; Carthage, Musée de Carthage.
4. Carthage mint, ca. 320–310. ℵ Stater, 9.36 g; Münz. u. Med. 66, Oct. 1984, 311.
5. Carthage mint, ca. 310–300. EL Shekel, 7.59 g; Münz. u. Med. 66, Oct. 1984, 312.
6. Carthage mint? ca. 320–300. Æ 6.35 g; *SNGCop* 102.
7. ṢYṢ, ca. 370–360. ℞ Tetradrachm, 16.92 g; Münz. u. Med. 426, Oct. 1980, 13.
8. Siculo-Punic mint, ca. 330–320. ℞ Tetradrachm, 16.93 g; Numismatic Fine Arts 11, 8 Dec. 1982, 53.
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10. Siculo-Punic mint, ca. 325. ℞ Tetradrachm, 17.07 g; Numismatic Fine Arts 12, 23–34 Mar. 1983, 34.

[68] P. Visonà, "Finds of Numidian Coins (c. 204–148 B.C.) in North Africa," *Trésors monétaires* 11 (Paris, 1989), p. 18.

[69] A *SNGCop* 409–13 "abusivamente scambiato forse per un semisse pesante" was found in an Italian hoard buried at the end of the second century B.C.: see S. L. Cesano, "Veroli.—Ripostiglio di monete enee della Repubblica Romana," *NScavAnt* 56 (1931), pp. 545–46 (= *RRCH* 148). For the concentration of finds of Carthaginian bronze coins in Bosnia and Croatia see I. Mirnik (above, n. 6) and "Circulation of North African etc. Currency in Illyricum," in *Arheološki Vestnik* 38 (1987), pp. 369–74.

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13. Carthaginian mint in Sicily, ca. 300-290. ÆR Tetradrachm, 17.01 g; Numismatic Fine Arts International 35, Summer 1988, 16.
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17. Carthage mint, ca. 260. ÆR Shekel, 7.53 g; Münz. u. Med. 66, 22-23 Oct. 1984, 313.
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21. Carthaginian mint in Sardinia, ca. 260–250. Æ 7.06 g; Hannover, Kestner Museum, 1929.234.
22. Uncertain mint (Carthage?), ca. 300–275. Æ 4.001 g; Paris, Cabinet des Médailles, 450.
23. Uncertain mint, ca. 290–270. Æ 2.94 g; *SNGCop* 220.
24. Uncertain mint, ca. 290–270. Æ 2.01 g; Glasgow, Hunterian Museum.
25. Uncertain mint, ca. 290–270. Æ 2.82 g, overstruck on a coin similar to 16; Glasgow, Hunterian Museum.
26. Uncertain mint, ca. 290–260. Æ 7.815 g; Paris. Cabinet des Médailles, 448.
27. Carthage mint, 256. AV 12.50 g; Münz. u. Med. 66, 22–23 Oct. 1984, 314.
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29. Carthage mint, ca. 255–251. EL 1½ shekels, 10.84 g; Münz. u. Med. 66, 22–23 Oct. 1984, 315.
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34. Carthage mint, ca. 238–230. Billon double shekel, 11.10 g; Firenze, Museo Archeologico, 35609.
35. Carthage mint, ca. 235–230. Æ 16.98 g; Paris, Cabinet des Médailles, 256.
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41. Carthage mint, ca. 218–208. EL 3/8 shekel, 2.78 g; Numismatic Fine Arts International 35, 1988, 17.
42. Carthage mint, ca. 215–203. ÆR 1/4 shekel, 1.88 g; Numismatic Fine Arts 12 (January-February 1979), 14.
43. Carthage mint, ca. 220–215. Æ 7.30 g; Glasgow, Hunterian Museum.
44. Carthage mint, ca. 215–210. Æ 8.359 g; Glasgow, Hunterian Museum = G. Macdonald, *Catalogue of Greek Coins in the Hunterian Collection University of Glasgow* (Glasgow, 1905), vol. 3, p. 596, 104.
45. Carthage mint, ca. 215–210. Æ 6.53 g; Glasgow, Hunterian Museum.

46. Carthaginian overstriking of Roman uncia minted in Sicily ca. 214–212 = M. H. Crawford, *Roman Republican Coinage* (Cambridge, 1974), 42/4. Æ 5.682 g; Paris, Cabinet des Médailles, 1979–149.
47. Carthaginian overstriking of Roman uncia minted in Sicily ca. 214–212. Æ 6.16 g; Paris, Cabinet des Médailles, 1979–151.
48. Carthaginian overstriking of litra of Syracuse, Fifth Democracy, ca. 214–212 = *SNGCop Sicily* 891. Æ 6.802 g; Paris, Cabinet des Médailles, no. 1979–152.
49. Carthage mint, ca. 215–208. Æ 17.20 g; Venezia, Museo Archeologico Nazionale, 3524.
50. Carthage mint, ca. 215–208. Æ 17.29 g; Venezia, Museo Correr.
51. Carthage mint, ca. 215–208. Æ 10.63 g; Cambridge, Fitzwilliam Museum.
52. Carthage mint, ca. 215–208. Æ 6.08 g; Vienna, Kunsthistorisches Museum, 26340.
53. Carthage mint, ca. 210–202. Æ 11.51 g; Firenze, Museo Archeologico, 35606.
54. Carthage mint, ca. 210–202. Æ 12.05 g; Glasgow, Hunterian Museum.
55. Carthage or Carthaginian mint in Sicily, ca. 213–210. Æ shekel, 6.87 g; Numismatic Fine Arts 14, 29 Nov. 1984, 75.
56. Akragas, ca. 213–211. Æ 1/4 shekel, 1.72 g; Numismatic Fine Arts 11, 8 Dec. 1982, 61.
57. Akragas or Morgantina, ca. 213–211 or 212–211. Æ 6.1 g; Carthage, Musée de Carthage.
58. Carthage mint, ca. 208–202. Billon 9.05 g; Hannover, Kestner Museum, 1922.2.
59. Carthage mint, ca. 202. Æ 1/4 shekel, 1.96 g; Numismatic Fine Arts, Summer 1986, 136.
60. Carthage mint, ca. 200–190. Æ 96.16 g; London, British Museum, G 257 = Jenkins and Lewis, p. 136, 11.
61. Carthage mint, ca. 200–190; Æ 98.73 g; Paris, Cabinet des Médailles, A. de Luynes Collection, 3872 = Jenkins and Lewis, p. 136, 12.
62. Carthage mint. ca. 200–190. Æ 14.929 g; München, Staatliche Münzsammlung.

63. Carthage mint, ca. 200–190. Æ 3.47 g; Cambridge, Fitzwilliam Museum.
64. Carthage mint, ca. 149–146. ℞ reduced double shekel (?), 13.21 g; London, British Museum, 1987–6–49 355.
65. Carthage mint, ca. 149–146. Æ unit. 2.99 g; London, British Museum = Jenkins and Lewis, 496–1.
66. Carthage mint, ca. 149–146. Æ half unit, 1.51 g; London, British Museum = Jenkins and Lewis, 500–1.

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ICONOGRAPHY OF THE CONTROL MARKS ON THE ALEXANDER ISSUES OF SOLI, CYPRUS

(PLATE 5)

JAMES A. SCHELL

No surviving ancient source recounts the tokens by which the polities of Asia Minor, Phoenicia, and Cyprus offered submission to the suzerainty of Alexander, son of Philip. The acknowledgment and payment of tribute constituted one hallmark of the relationship, while the contribution and maintenance of troops and ships were others (Arr.: I.17.7; II.20.1-3). The Persian "Great King" required symbolic offerings of earth and water (Hdt. 5: 18.2; 73.2). Despite his general policy of adopting indigenous customs intact, it seems unlikely that Alexander, purportedly on a mission of retribution against the Great King, continued this particular tradition (Arr. III.18.12). Ancient accounts tell of cities throwing open their gates as a sign of peaceful submission (Xen. 3.1.19). Conversely, Tyre's refusal to permit Alexander entry to its island citadel for the purpose of making sacrifice in the famous sanctuary of Tyrian Herakles precipitated the historic siege which ended in the destruction of the city and the enslavement of its inhabitants (Arr. II: 16.7-17; 24.5-25). Numismatic evidence suggests that one token of submission was the striking of Attic weight coins with the types of Alexander (Bellinger 1963, 53-55). In the pre-Hellenistic Levant, the striking of coins was a fundamental instrumentality of the state, employed at need without leave or patent from the overlord. Any decree or edict promulgated by a superior authority

curtailing this prerogative would have amounted to interference in the day-to-day business of the state (Martin 1995, passim). Absent seignorage, however, the stipulation that tribute and the expenses of the *symmachia* be paid in a given specie would not have been construed as external interference. Although a few cities struck coins with local types alongside those with Alexander's types, most cities seem to have decided it was impolitic to do so (Newell 1915, 297-99).

The terms, symbols, and etiquette of submission, now unknown to us, were doubtless fully developed by the time Alexander arrived in Phoenicia, following his victory at Issos (late fall, 333 B.C.). The cities of Phoenicia, never willing allies of the Great King, readily accepted Alexander as overlord, while only Tyre and Gaza resisted (Arr. II: 20.1-3; 16.7-17; 26.1-4). The kings of the Cypriot cities, finding themselves threatened with isolation, sent embassies to Alexander offering submission and allegiance. Alexander received the embassies of the Cypriot kings, accepted them as allies, and confirmed the status quo, probably on the usual terms (Arr. 20.1-3; Diod. 17.40.2). Arrian describes these events as occurring after the investment of Tyre (early 332 B.C.).

In "Some Cypriot 'Alexanders,'" E. T. Newell (1915, 294-322) presents the numismatic evidence for the attribution of certain Alexander issues to Cyprus. Despite later emendation, most notably by Newell himself (1923, 105-12), Vlamis (1980, 71-74), and Troxell (1996, 284-85), Newell's arguments remain basically sound. Interestingly, the particular series which is the focus of this paper was not assigned to Cyprus until later (Newell 1915, 294-322; 1923, 109-10).

The series in question consists of gold staters, silver tetradrachms, and bronze hemiobols. It has been described, in whole or part, by Müller (1855, 182-85), Prokesh-Osten (1869, 35 and 38), Newell (1912, 111-12; 1923, 109-10), Vlamis (1980, 71-74), Amandry (1984, 64-65), Price (1991, 382-84), and Troxell (1996, 284-85). Despite the careful attention of these meticulous scholars, it now seems that the interpretation of the primary control mark, prow, must be revised.

The semiotics of the control marks or minor types of the Alexander coinage are highly controversial. Müller's arrangement (1855, 94-122) resulted from the interpretation of control marks as insignia of the issuing city. Newell proposed (1912, 115-25) that the majority of control marks were signets of the magistrates responsible for the issue,

similar to the Roman tresviri monetales. Price noted (1991, 34-36) that control marks may be the signets of mints magistrates, the insignia of the issuing city, and, perhaps, an indication of the batch of metal from which the coins were struck. In keeping with these interpretations, the present author speculates that some control marks indicate the individuals or entities for whom the issue was struck. In the alternative, it is reasonable to infer that the striking of Attic weight coins of Alexander's types serves as indication of acceptance of the suzerainty of Alexander. Thus, control marks announce, both to Alexander and to the world at large, the identity of the individual or entity acknowledging submission. Indeed, such a duality or plurality of meanings provides a most satisfactory interpretation for the present series.

Regardless of the specific reference, it seems clear that control marks denote some key feature of the production or distribution of the issue. Certain inferences follow. First, the control mark must be recognizable even if small. Most control marks were engraved in great detail (Plate 5, 1). Second, the celator can have had no latitude whatsoever in choosing the elements of the control mark. While artistic style and execution varied throughout a series, the elements of individual control marks were constant. If a control mark were not both recognizable and constant (within the mint series), its utility as a quality assurance device and its value as propaganda would have been seriously eroded. Third, the small scale and fine detail of many control marks convey limited resistance to wear, supporting the notion of a time-limited quality assurance function.

With these factors considered, examination of those issues now attributed to Soli on Cyprus reveals the primary control mark to be a naval ram (εμβολοσ) directed left rather than a prow directed right. Specifically, this control mark is a three-pronged naval ram with a trident decoration viewed in profile from the port side. Müller attributed issue 502 (1855, 182-85) to Magnesia and described the symbol as a prow, without stating its direction. Newell in *Reattribution* (1912, 49), simply listed the control mark of issue 258 as prow without further description. In *Demanhur* he wrote (1923, 109-10) that issues 2684-2714 were "distinguished by the symbol prow" and assigned them to Amathus on the basis of style and historical probability. Similarly, Vlamis (1980, 71-74) recorded the control mark as a prow without explicit decription.

Both Price (1991, 384) and Troxell (1996, 284-85) described the control mark as prow r. Plate 5, 2 is an enlargement of the relevant engraving scanned from Müller's plate 8. Plate 5, 3 is an enlarged photograph of the control mark from a tetradrachm of the Price series 3094. While a modest similarity is apparent, close inspection reveals differences in certain elements of the control mark. The engraving lacks the inferior arcuate element seen in the photograph. The curvature of the superior structure is much too acute. The trilinear structure (in fact, a trident) extending to the left edge of the control mark in the photograph has been reduced to a single linear element in the engraving. The smaller modulus of the gold stater and the possible loss of detail due to wear combine to make Müller's interpretation understandable. Significantly, the first archaeological recovery of an ancient naval ram occurred in 1980, off the coast of Athlit, Israel, Plate 5, 4 (Linder 1991, 3-5). Subsequently, the Fitzwilliam Museum, Cambridge, and the Deutsches Schiffahrtmuseum, Bremerhaven, have acquired specimens of ancient naval rams (Murray 1991, 51). Indeed, the Bremerhaven specimen (Plate 5, 5), while of uncertain date, is nearly identical to the naval ram represented by control mark under discussion.

Turning to other control marks in the Alexander series, one finds very specific symbolic references--e.g., a rudder, a stern, an akrostolion, a quiver (without arrows), and a knucklebone, to name just a few. An unattached naval ram would seem to be a perfectly acceptable control mark so long as it served to identify the appropriate polity or individual. Granted that most numismatic authors use prow, ram, and rostrum interchangeably, it is unlikely that the military elite of the ancient Levant would have done so. Plate 5, 6 is an enlargement of a reverse of a tetradrachm of Antigonos Doson which has been labeled to illustrate the distinction.

H. A. Troxell (1999, 5-6) recounts key references to Soli in ancient sources which confirm its wealth, prominence, and service to Alexander. Its fleet almost certainly participated in the siege of Tyre (Arr. II.18.8; Plut. 16; Troxell 1999, 5-6). Nicokles, son of Pasikrates, the king of Soli, accompanied Alexander on his eastern campaign and served as trierarch on the Indus expedition commanded by Nearchus (Arr. 18, 8). Whether the reference is to Nicokles, to Pasikrates, to the Solian mint magistrate (if different), to Solian seamen, or to Soli itself, the naval ram, the

primary armament of the ancient warship, is a symbol appropriate to all contexts, functional, iconographical, and historical.

Similar arguments could be applied to the control mark prow. The prow icon is used alone or in combination with other control marks at Amphipolis, Pella, Abydus, Methymna, Samos, Cnidus, Soli (Amathus), Aradus, Babylon, and an uncertain mint in southern Asia Minor (Price 1991, 563). Of those issues with a single primary control mark struck during Alexander's lifetime, the prow icon is limited to Amphipolis (Price 1991, nos. 1-4). The prow issues of Amphipolis are generally regarded as being among the earliest issues of Alexander (Newell 1911, 44-45 and 1912, 25-28; Newell 1923, 26 and 65-71; Price 1991, 27-29; Troxell 1991, 49-62; Troxell 1997, 86-98). The controversies concerning the beginnings of Alexander's coinage will not be discussed here; regardless of where and when the coinage began, the prow issues of Amphipolis had been struck by 332 B.C. (Price 1991, 27-29; Troxell 1991, 49-62; Troxell 1997, 86-98). Newell's analysis of the Demanhur hoard (1923, 149-51) demonstrates the wide circulation of Alexander's tetradrachm issues during the years preceding 317 BC. The submission of Soli to Alexander (332 B.C.) is a terminus post quem for the Alexander coinage from that mint; the actual commencement of Alexander coinage at Soli is assigned the later date of circa 325 B.C. for several reasons (Newell 1923, 44; Price 1991, 382-84; Troxell 1999, 4). Noting the many alternative explanations, the present author suggests that the prow icon was recognized as a control mark of the Amphipolis series at the time the Cypriot mints began the striking of Alexander issues. With the maritime symbol *par excellence*, the prow, unavailable by virtue of prior use, adoption of the naval ram conveys a similar meaning while remaining fully distinguishable to the elite of the fourth century B.C., if not to the numismatic scholars of the nineteenth and twentieth centuries A.D.

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THE PHOENICIA 1997 HOARD OF ALEXANDER-TYPE TETRADRACHMS

CHARLES A. HERSH

In early 1997 a large find of silver tetradrachms struck by Alexander the Great and his successors was found in the Levant, most likely in Lebanon. Soon after its discovery at least part of it was offered on the numismatic market in London, where two groups of coins were sold to two British dealers. In April one of the dealers apprised me of his company's purchases and sent polaroid photographs of these pieces to me. When the photos arrived it was quickly evident from the coin issues present and from the assortment of mints at which they had been struck that this was an important hoard, dating from the early third century B.C. I wasted no time in contacting another major dealer in Europe, asking him to make inquiries and find out what he could about who owned the balance of the coins, so that I might view those pieces or at least get information about the contents of the find. With surprising alacrity, he told me that the remainder of the hoard had been divided into two portions which were purchased by dealers

Charles Hersh has been a stimulating and supportive friend to many ANS members and staff members over the last five decades. After his death on January 5, 1999, Hyla A. Troxell thoroughly and patiently went over the proofs for these two articles. The editor thanks Mrs. Troxell and misses Charles's visits and congenial conversational acumen. *Ed.*

in the United States, one in the midwest and the other on the west coast. Thanks to their generosity I was able to view both of those parcels during May and make notes on their contents. When in London in June I was able to inspect the unsold pieces in the English groups and in late July I examined once again the two American lots. In all I saw at least 800 tetradrachms and bought over 40 of them.

The composition of the material made the Levantine origin of the hoard most credible, as there were a sizable number of coins from the mints of Ake, Tyre, Sidon, and Byblos in Phoenicia and Kitium and Salamis on Cyprus in addition to several hundred tetradrachms from Babylon further to the east (which was the largest and most active producer of coins in Asia during this period). Almost all bore the types and name of Alexander, although the majority were issued by his successors. After Alexander's death in 323, aside from pieces struck in the name of Philip III who became king of Macedonia for six years or so following the demise of his half-brother, it was not until 306 at the earliest that the successors actually put their own names on their coinages, so strong was the tradition and memory of Alexander following the end of the Temenid dynasty of Macedonian kings. Among the other coins in the hoard there were several dozen coins issued in the name of Seleucus I, mostly from the mint of Seleucia on the Tigris but also from Ecbatana and Carrhae, as well as one tetradrachm of Tyre bearing the name of Demetrius Poliorcetes. These later issues show little or no wear. From the contents and condition of the find a burial date of 285-280 seems most likely.

Although no exhaustive description was possible due to time constraints and other limitations, I recorded the following issues as identified by Martin Price (1991) as being present in the find. Additional variants are indicated by a prime symbol (′), as 3189′ or 3538′ or 3538″. Pre or post indicates probably before or after the Price coin. Asterisks mark coins of Tyre illustrated and discussed in the following article "*Tyrus Rediviva* Reconsidered." Additional abbreviations below are **LF** (in left field), **TH** (below throne), and *DP* (*The Coinage of Demetrius Poliorcetes,* Newell 1927).

ISSUES BEARING THE NAME OF ALEXANDER

Pella: 260
Amphipolis:† 475, 485
Sardes: Pre-2659 LF star, ☤; TH A
Side: 2949
Tarsus: 3011
Uncertain Southern Asia Minor Mint: 3080, 3080A
Citium: 3108
Salamis: 3139, P129, 3151, 3153, 3176, 3177, 3189′ LF ⋈
Myriandrus: 3233
Ake: 3244, 3271, 3272, 3281, 3283, 3287, 3291, 3293, 3298
Aradus: 3332, P158, tetradrachms in 3339-59
Byblos: 3424, 3426
Marathus: tetradrachms in 3434-51
Sidon: P169, P175, 3504, 3508, 3511, 3514, 3515, 3519, 3520, 3522, 3524, 3525, 3526
Tyre: 3528 = 3544′*, 3530′*, 3534, 3537, post 3537*, 3538, 3538′*, 3538″*, 3539, 3540*, 3541*, 3542*, 3542′*, 3546*, 3548*, 3551, 3556*, 3558**, 3559, 3561*, 3561′*, 3562*
Uncertain of Phoenicia or Syria: 3575, 3576, 3577′ LF ⊙, TH above strut Y
Babylon: 3581, 3635, 3679, 3692, P181, P182, P186, P189, P197, P200, P205, 3704, 3708, 3713, 3723, 3725, 3734, 3747, 3752, 3760, 3771, 3772, 3776
Babylonia: 3786
Susa: 3832, 3850, P208
Ecbatana: 3902, 3913, 3918
Memphis: 3970, 3971
Uncertain East: P229, 4006A

† Various photographs of the hoard material in my possession record only these two issues from Amphipolis during the reign of Cassander. There were, however, many of these Λ-torch issues (Pricés 438-96) present in the find. I did not make definitive notes on exactly which ones I saw because of the short viewing time available and my limited interest in this group of coins.

ISSUE BEARING THE NAME OF DEMETRIUS POLIORCETES

Tyre: *DP* 27*

ISSUES BEARING THE NAME OF SELEUCUS I

Seleucia on the Tigris: *ESM* (Newell 1938) 4 and 5
Carrhae: *WSM* (Newell 1941) 775
Ecbatana: *ESM* 480

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TYRUS REDIVIVA RECONSIDERED

(PLATES 6–9)

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Dedicated to the memory of Edward T. Newell

Newell's *Tyrus Rediviva* (Newell 1923, *TR*) was a classic die study of the gold and silver coin issues that had been struck at the mint of Tyre in Phoenicia while it was under the control of Demetrius Poliorcetes during the last years of the fourth century and the early years of the third. The coins were the normal types and denominations of Alexander the Great of Macedon and for the most part bore his name. The volume was one of the earliest definitive die studies of a Greek mint and as such was a prime example of the progress made by numismatists like Newell (1912, 1916, 1917, and 1919), Kurt Regling (1906 and 1927), and Charles Seltman (1921 and 1924) in the first part of the twentieth century toward developing a more technically sound and scientific methodology for examining specific coinages through the application of die studies in contrast to the style-driven and more descriptive presentations that had been used previously.

The Tyrian mint output of this period provided Newell with a solid corpus of material as the coins formed a generally cohesive and readily recognizable group. For this analysis he identified 33 separate issues of the mint based on the varying reverse die monograms, letters, and symbols, most of which were enclosed in a circle. These issues had five different obverse dies for the gold staters and twelve for the silver tetradrachms, with numerous obverse and reverse die links

between the various issues. Historically, there was sufficient, but not plentiful, information available to him: the city of Tyre had been captured from Ptolemy I in 312 by the forces of Antigonus Monophthalmus and his son, Demetrius Poliorcetes, and was lost by Demetrius in 286 to Ptolemy once again. Thus the period under discussion covered a maximum of 26 years, with the final issues being tetradrachms having reverse dies bearing the name of Demetrius as king rather than that of Alexander which had appeared on all of the earlier coins.

As a student of the silver coins of Alexander and the Alexander-type issues of his successors, I had a keen interest in the pieces produced at the Tyrian mint because of the fine style of some of the obverse dies and the interesting die marks of a number of the reverses. In recent years I had also realized that there were certain anomalies present in Newell's die sequences. First, his tetradrachm obverse die IX is not a new die at all, but represents a recutting of his die III. He had failed to realize that the large obverse die break that he had noted on his issue 12 was exactly the same flaw that occurred on the die for his issues 23, 25, and 26. The recutting, although it changed various details of the Herakles head and the lion skin headdress, failed to alter the massive die crack across the hair and head of the lion skin and the forehead of Herakles. Second, the club in a circle symbol on that same silver issue 12 is identical with that present on his issues 23 and 25-27 and not much earlier in his sequence. Third, Newell had noted (1916:68 and 1923:12) that his studies of the nearby mints of Sidon and Ake, where the reverse dies bore a date, led him to postulate a die life of two years on average for both gold and silver obverse dies. I thought that during times of intense mint activity, such as during the early years at the Tyrian mint, that this survival time might be too long. Newell also initiated the coining at Tyre in 306, based on the perceived closing dates of the other Phoenician mints of Sidon in 306/5 and Ake in 305/4, as indicated by their dated issues. In view of the firm date indicated for the closing of the mint of Demetrius at Tyre (286) and due to the considerable interlinking of the dies, I wondered if the Tyrian mint had begun its operations as early as Newell had surmised. Fourth, his issues 14, 16, 18, and 20, with the title **ΒΑΣΙΛΕΩΣ** added to the **ΑΛΕΞΑΝΔΡΟΥ** legend on each of them, was placed in the middle of

the series, with no logical reason for the beginning or ending of this addition. Fifth, in his *Demetrius Poliorcetes (DP)* Newell (1927) listed his tetradrachm issue *IDP* 28 as a new one, but it had the same reverse die as *DP* 29 (issue number in Tyrus Rediviva, *ITR* 31) and thus was a duplication. Also, I found an issue unpublished by Newell which had an obverse die unknown to him, as well as four new obverse linkages within known tetradrachm issues.

Price (1991) followed Newell's arrangement of the mint of Tyre very closely and did not make any basic corrections to it. He did insert several new pieces in his listing, including 3534A, a new tetradrachm issue. However, he made some minor errors of his own. For example, he did not realize that 3544 was the tetradrachm issue of stater 3528 (and so should be numbered 3528A, here 3528') or recognize that 3558 and 3559 were the same issue, as were 3550 and 3551. He also did not correct a number of errors in the delineation of some monograms, such as that in the left field (LF) on 3539, that in the LF on 3540, those in the LF and below the throne (TH) of 3542, and those in the LF and TH of 3546.

This was the situation as far as the mint of Tyre was concerned, when in early 1997 a large hoard of at least 800 tetradrachms of Alexander the Great and his successors, said to have been discovered in the Levant, came onto the numismatic market. I have named this the Phoenicia 1997 Hoard and described it in the preceding article in this volume. From its composition, an origin in the Levant seems most credible. The discovery of over 100 tetradrachms from a relatively rare mint like Tyre was second only in quantity to those from Babylon, by far the largest mint of all of Asia. Probably this hoard contained more Tyrian silver than was known up to this time. In it were at least three new tetradrachm obverse dies and five additional new issues (or major varieties of known ones), as well as several new linkages. As is indicated in the following corpus of the issues, I acquired 18 Tyrian tetradrachms that I considered significant from this find. I thought that in view of this new material and since there were a number of changes which should be made to Newell's arrangement as well as to the sequence as catalogued by Price, it would be of use to revise and reorder the issues of the mint of Tyre.

New issue numbers have been assigned to more closely indicate the sequence of emission. Stater issues are listed before closely allied tetra-

drachm issues as a matter of convenience. Obverse stater dies are cited in roman capital letters followed by lower case letters indicating each coin. Tetradrachm obverses are in upper case roman numerals, followed by an arabic number for each coin. Die links between staters are indicated by a solid line—obverse links are to the left, reverse links are to the right. Die Links between silver coins are indicated by dashed or dotted lines—obverse links to the left, reverse links to the right. The monograms and other markings have been numbered and are presented in the accompanying Figure. Issue numbers are those of Price 1991 followed by Newell's 1923 issue die number (*ITR, DTR*) or 1927 die number (*DDP*). The locations of additional markings are given as LF and RF (left or right field), LW and RW (below left or right wing) and TH (below throne). Asterisks indicate coins illustrated with this article, while Newell 1923 plate locations are given in parentheses. Coins from the hoard reported in the preceding article are identified as Phoenicia.

ISSUES FROM TYRE UNDER DEMETRIUS POLIORCETES

GOLD STATERS

Obv.: Head of Athena r., wearing crested Corinthian helmet decorated with coiled snake.

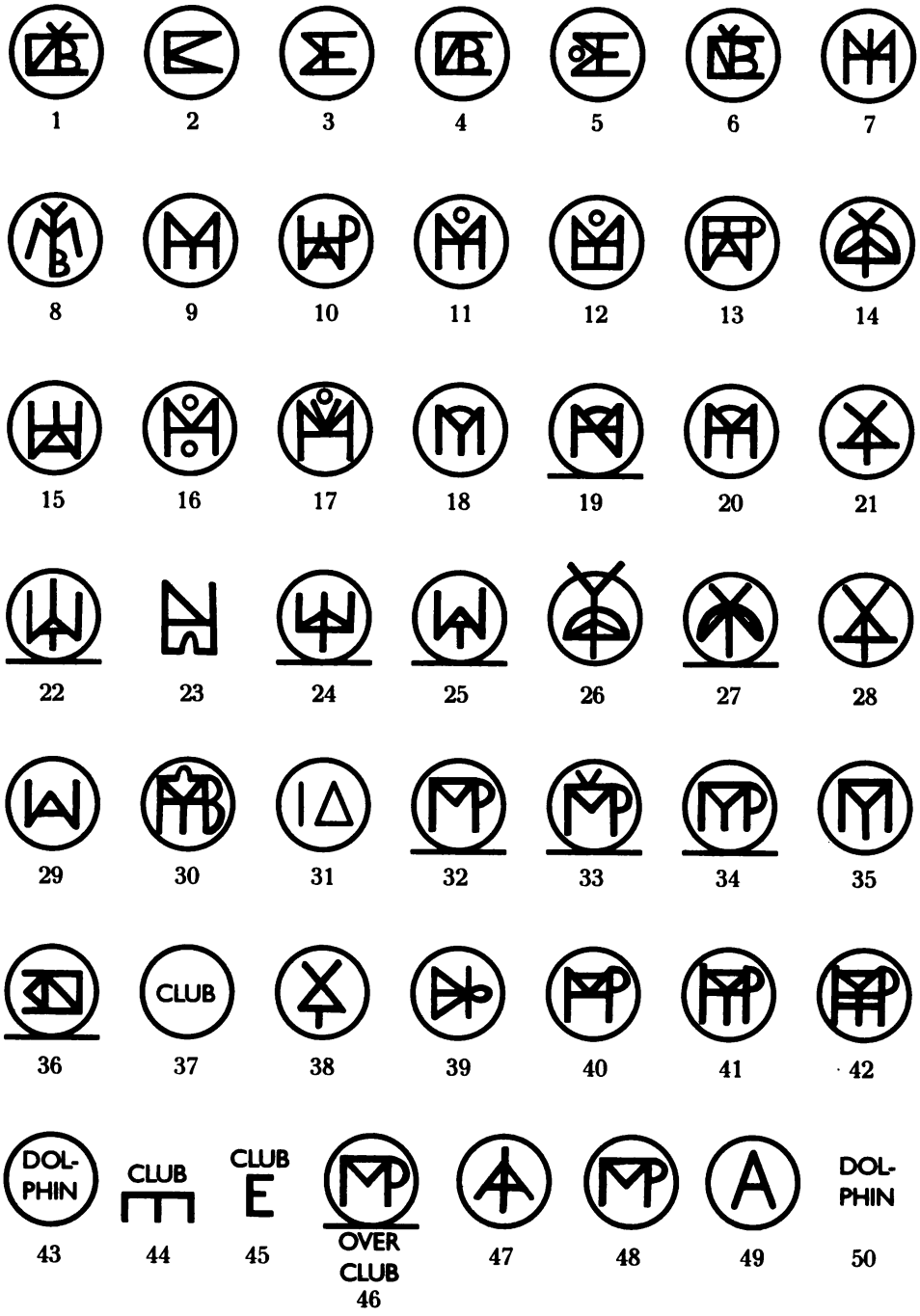
Rev.: Nike standing l. holding wreath in outstretched r. hand and mast (stylis) in l. At right, ΑΛΕΞΑΝΔΡΟΥ.

SILVER TETRADRACHMS AND DRACHMS

Obv.: Beardless head of Herakles r., wearing lion skin headdress.

Rev.: Zeus seated l. on high-backed throne, wearing himation over lower limbs, holding eagle in outstretched r. and long scepter in l. At r., ΑΛΕΞΑΝΔΡΟΥ.

1. Staters. 3545 = *ITR* 15. LF 1, RW 2.
   A = *DDP* D.
   a. ANS, ETN (Pl. 2, 2) 8.59
   b. Paris 432
   c. Berlin 8.58
   d. Lyon 8.54



KEY TO MONOGRAMS

2. Tetradrachms. In exergue, **ΒΑΣΙΛΕΩΣ**. 3546 = *ITR* 16. **LF** 1, **TH** 3.
   - I = *DDP* VI
     - a. ANS, ETN (Pl. 2, 3) 17.01
     - *b. Author (Phoenicia) 17.04
     - c. Beirut 297

3. Tetradrachms. In exergue, **ΒΑΣΙΛΕΩΣ**. 3547 = *ITR* 16. **LF** 4, **TH** 5.
   - I = *DDP* VI
     - *a. BM 16.70
     - a. Berlin

4. Staters. 3549 = *ITR* 17. **LF** 6, **RW** 7.
   - A = *DDP* D
     - a. ANS 8.60
     - *b. BM 8.59
     - c. Florence
     - d. BM (Pl. 2, 4) 8.62

5. Tetradrachms. In exergue, **ΒΑΣΙΛΕΩΣ**. 3551 = 3550 = 3551 = *ITR* 18. **LF** 6, **TH** 8.
   - I = *DDP* VI
     - *a. Munich
   - II = *DDP* VII
     - b. Berlin (Pl. 2, 5)
     - c. Vienna
     - *d. Author 17.14
     - e. Meydancikkale 2197, 17.03
     - f. Meydancikkale 2198, 17.12

6. Staters. 3552 = *ITR* 19. **LF** 9, **RW** 10.
   - A = *DDP* D
     - *a. Paris (Pl. 2, 6) 8.58
     - b. Berlin 8.60

7. Tetradrachms. In exergue, **ΒΑΣΙΛΕΩΣ**. 3548 = *ITR* 20. **LF** 11, 12, **TH** 10, 13.
   - I = *DDP* VI
     - a. Berlin (Pl. 2, 7)

b. BM(a) 17.10
c. ANS, ETN 16.98
II = *DDP* VII
d. Berlin (PL. 2, 8)
*e. Author (Phoenicia) 17.13
f. ANS, ETN 17.04
g. ANS, ETN 15.55

8. Tetradrachms. In exergue, **ΒΑΣΙΛΕΩΣ**. 3543 = *ITR* 14. **LF** 12, 17, **TH** 14.
II = *DDP* VII
*a. Author 17.13
III = *DDP* V
*b. BM(a) (Pl. 2, 1) 17.04

9. Staters. 3554 = *ITR* 22. **LF** 14, **RW** 15.
A = *DDP* D
a. Bement 716 (Naville 6, 28 Jan. 1924) (Pl. 2, 11) 8.61
b. Berlin 8.61
*c. ANS, ETN 8.55
d. BM 8.62

10. Staters. 3555 = [*ITR* 22]. **LF** 14, **RW** 16.
A = *DDP* D
*a. ANS, ETN (Pl. 2, 10) 8.59
b. BM 8.55
c. Berlin 8.55
d. Ex ANS, ETN 8.32 (edge filed)

11. Tetradrachms. 3553 = *ITR* 21. **LF** 11, **TH** 10.
IV = *DDP* VIII
*a. Yakountchikoff Coll. (Pl. 2, 9)

12. Tetradrachms. 3542 = *ITR* 13. **LF** 18, **TH** 19.
V = *DDP* IV
a. St. Petersburg (Pl. 1, 15)
*b. Author (Phoenicia) 17.11

13. Tetradrachms. 3542′, *ITR* not. LF 20, TH 23.
    V = *DDP* IV
    *a. Author (Phoenicia) 17.18

14. Staters. 3528 = *ITR* 1. LF 20, RW 14.
    B = *DDP* A
    a. BM (Pl. 1, 1) 8.58
    *b. ANS (ex Naville 16, 1033) 8.58
    c. Berlin 8.64
    d. Paris 427
    e. H. A. Greene Coll.
    f. Berlin

15. Tetradrachms. 3528′ = 3529 = *ITR* 2 (and variations) (3544 = 3528'). LF 20, TH 14, 21, 26.
    VI = *DDP* I
    a. ANS, ETN (Pl. 1, 2) 17.13
    b. Berlin (Prokesch-Osten) 17.00
    c. St. Petersburg
    d. ANS (Armenak Hoard 130) 17.12
    e. ANS, ETN 17.14
    *f. Author (Phoenicia) 17.01
    g. Athens (Epidaurus Hoard)
    h. ETN 17.18
    i. ANS, ETN 17.07
    j. Stockholm 1062, 17.26
    k. ANS duplicate (Storrs) 17.06
    l. ANS, ETN 17.17
    m. Berlin (Prokesch-Osten) 17.13
    n. Author 16.91
    o. Stockholm (Von Post 31) 17.10
    p. Meydancikkale 2190, 17.08

16. Staters. 3530 = *ITR* 3. LF 22, 24, RW 14.
    B = *DDP* A
    a. BM (Pl. 1, 3) 8.57
    *b. ANS, ETN 8.59
    c. Cambridge (McClean) 8.58
    d. Paris

e. Berlin
f. *Weber* 2080, 8.61
g. Saraglos Coll.
h. In trade (Spink) 8.60

17. Tetradrachms. 3534 = *ITR* 4 and variations. LF 22, 25, TH 14, 26.
VI = *DDP* I
*a. ANS 16.99
b. Seyrig Coll. 17.00
c. Asia Minor Hoard 104
VII = *DDP* II
*d. Author 17.15

18. Staters. 3533 = *ITR* 6. LF 22, LW 14.
B = *DDP* A
*a. BM (Pl. 1, 6) 8.57
b. Berlin

19. Tetradrachms. 3530′ = *ITR* 4 and variations. LF 22, TH 27.
VI = *DDP* I
*a. Author (Phoenicia) 17.00
b. Athens
VII = *DDP* II
*c. Leiden (formerly the Hague)

20. Tetradrachms. 3531 = *ITR* 4 and variations. LF 22, TH 28.
VI = *DDP* I
*a. Berlin (Pl. 1, 4)
b. Author 17.07
c. ANS, ETN 16.18
d. Copenhagen 812, 16.96
e. ANS (Storrs) 16.26
f. Saraglos Coll.

20A. Drachms. 3532 = *ITR* 5. LF 22, TH 28.
i = *DDP* not
*a. Naples (Pl. 1, 5)
b. Istanbul

21. Tetradrachms. 3534A, *ITR* not. LF 22, TH below strut 14, above strut Λ.
VII = *DDP* II
*a. ANS (Fraleigh) 17.00
VIII = *DDP* not
*b. Author 17.04
c. Triton I, 2 Dec. 1997, 429, 17.13
d. Meydancikkale 2191, 17.03

22. Staters. 3535 = *ITR* 7. LF 22, LW 14, RW Δ.
C = *DDP* B
*a. Berlin (Pl. 1, 7)
b. Saraglos Coll.

23. Staters. 3536 = *ITR* 8. LF 29, RW 30.
D = *DDP* C
*a. St. Petersburg (Pl. 1, 8)

24. Tetradrachms. 3537 = *ITR* 9. LF 22, TH 30.
VII = *DDP* II
a. Cambridge (Fitzwilliam) (Pl. 1, 9) 16.94
b. Berlin 16.72
*c. Author 17.08
d. Beirut 218
e. Meydancikkale 2192, 16.25

25. Tetradrachms. Post 3537, *ITR* not. LF 25, TH 31.
IX = *DDP* not
*a. Author (Phoenicia) 17.10

26. Tetradrachms. 3538 = *ITR* 10. LF 25, TH 32.
VII = *DDP* II
a. Vienna
*b. ANS, ETN (Pl. 1, 10) 17.05
c. BM(a) 17.03
X = *DDP* III
d. BM(c) 16.82
*e. Author 17.18

27. Tetradrachms. 3538′, *ITR* not. LF 22, TH 33.
VII = *DDP* II
*a. Author (Phoenicia) 17.06

28. Tetradrachms. 3538″, *ITR* not. LF 22, TH 34.
VII = *DDP* II
*a. Author (Phoenicia) 17.17

29. Tetradrachms. 3539 = *ITR* 10. LF 22, TH 35.
X = *DDP* III
a. Munich (Pl. 1, 11)
*b. Author 17.11
c. Meydancikkale 2193, 16.89

30. Tetradrachms. 3540 = *ITR* 11. LF 25, TH 36.
X = *DDP* III
a. ANS, ETN (Pl. 1, 12) 16.89 (holed)
*b. Author (ex B. Y. Berry Coll.) 17.09
c. Meydancikkale 2195, 17.02
d. St. Petersburg (Pl. 1, 13)
e. BM 16.94
XI = *DDP* not
*f. Author (Phoenicia) 17.09

31. Tetradrachms. 3541 = *ITR* 12. LF 37, TH 36.
X = *DDP* III
a. ANS, ETN (Pl. 1, 14) 17.18
*b. Author 17.18
c. ANS, ETN 17.15
d. BM 17.05
e. Naville 5, 18 June 1923, 1415, 17.16
f. Berlin 16.90
g. Haughton 78 (ex Storrs) (30 Apr. 1958) 17.15
XII = *DDP* not
*h. Author (Phoenicia) 16.95

32. Tetradrachms. 3556 = *ITR* 23. LF 37, TH 38.
XIII (X recut) = *DDP* IX (III recut)
a. Munich (Pl. 2, 12)
b. ANS (Armenak Hoard 131) 17.12
*c. Author (Phoenicia) 17.15

33. Tetradrachms. 3560 = *ITR* 26. LF 37, TH 39.
  XIII (X recut) = *DDP* IX (III recut)
    *a. Hartford (Pl. 2, 17)

34. Tetradrachms. 3559 = *ITR* 25 and variations. LF 37, TH 40.
  XIII (X recut) = *DDP* IX (III recut)
    a. BM (not 3558 as listed, but 3559) (Pl. 2, 14) 17.01
    b. Berlin
    c. Athens 16.85
    d. ANS (Armenak Hoard 132) 17.09
    e. ANS, ETN (Pl. 2, 15) 17.11
    *f. Author 17.14
    g. Alexandria
    h. Milan 1009
    i. Berlin 17.05

35. Staters. 3557 = *ITR* 24. LF 37, RW 41.
  E = *DDP* E
    *a. St. Petersburg (Pl. 2, 13)

36. Tetradrachms. 3558 = *ITR* 25 and variations. LF 37, TH 41, 42.
  XIII (X recut) = *DDP* IX (III recut)
    a. Vienna
    *b. Author (Phoenicia) 17.07
    c. Meydancikkale 2201, 17.09
  XIV = *DDP* X
    d. ANS, ETN (Pl. 2, 16) 15.90
    *e. Author (Phoenicia) 17.09

37. Tetradrachms. 3561 = *ITR* 27. LF above, 37, LF below, 50.
  XIII (X recut) = *DDP* IX (III recut)
    *a. Author 16.85
  XV = *DDP* XI
    b. Boston (Museum of Fine Arts)
    c. Vienna (Pl. 2, 18) 17.10
    *d. Author (Phoenicia) 17.13
    e. Meydancikkale 2203, 17.13

38. Tetradrachms. 3561′, *ITR* not. LF above, 37, LF below, 50, TH 44
XV = *DDP* XI
*a. Author (Phoenicia) 17.16 (rev. die recut, 44 added below throne)

39. Tetradrachms. 3562 = *ITR* 28 = *ITR* 25. LF 45
XV = *DDP* XI
a. ANS, ETN (Pl. 3, 1) 16.95
*b. Author (Phoenicia) 17.10

40. Tetradrachms. At r., ΔΗΜΗΤΡΙΟΥ replaces ΑΛΕΞΑΝΔΡΟΥ. *IDP* 26 = *ITR* 29. LF 45
XV = *DTR* XI
*a. Paris (Pl. 3, 2) 16.85
b. Author 17.07
On the two pieces above (a and b) the rev. die has been recut, with ΑΛΕΞΑΝΔΡΟΥ changed to ΔΗΜΗΤΡΙΟΥ.
c. BM (Pl. 3, 3) 17.11
*d. Author 16.88

41. Tetradrachms. Legend as issue 40. *IDP* 27 = *ITR* 30. LF 46
XV = *DTR* XI
a. Berlin (Prokesch-Osten) (Pl. 3, 4) 16.72
*b. Author (Phoenicia) 17.23

42. Tetradrachms. At r., legend as issue 40 and in exergue, ΒΑΣΙ-ΛΕΩΣ retrograde for coins a, b, and c and ΒΑΣΙΛΕΩΣ for coins d and e. *IDP* 29 = *IDP* 28 = *ITR* 31. LF 37, TH 48.
XV = *DTR* XI
a. ANS, ETN (*IDP* Pl. 17, 26) 16.72
*b. Author (ex Kaftanzoglou Coll.) (Pl. 3, 5) 16.80
c. M & M Numismatics 1, 7 Dec. 1997, 76, 17.11
XVI = *DTR* XII
d. Berlin (Imhoof-Blumer) (Pl. 3, 6) 17.00
e. ANS, ETN (ex Yakountchikoff Coll.) 16.95

43. Tetradrachms. At r., legend as issue 40 and in exergue, traces of **ΒΑΣΙΛΕΩΣ**. *IDP* 30 = *ITR* 32. **LF** 37, **TH** 47.
– – XVI = *DTR* XII
*a. ANS, ETN (ex Fenerly Bey Coll., Egger 41, 18 Nov. 1912, 431) (Pl. 3, 7) 16.86

44. Tetradrachms. At r., legend as issue 40 and in exergue, **ΒΑΣΙΛΕΩΣ**. *IDP* 31 = *ITR* 33. **LF** 43, **TH** 49.
– – XVI = *DTR* XII
*a. ANS, ETN (Pl. 3, 8) 16.70

THE ARRANGEMENT OF THE TYRIAN MINT ISSUES

There is a lot of information available from the obverse die linkages and the reverse die monograms, symbols, and legends that can be used to arrange the staters and tetradrachms which were minted at Tyre. Some of this data was available to Newell and Price, while other evidence was developed from the coins found in the Phoenicia 1997 Hoard.

1. The tetradrachms having the reverse legend **ΔΗΜΗΤΡΙΟΥ**, which replaced **ΑΛΕΞΑΝΔΡΟΥ** on issues 40-44, were the last silver coins struck by Demetrius Poliorcetes at Tyre. This seems quite clear from the poor style and poor quality of the dies themselves, their long use which resulted in a very worn and damaged obverse die XV (*DTR* XI) which was used over a protracted period of time for issues 37-42, much of it in a severely deteriorated condition. Reverse dies were recut (as on issue 40) or engraved carelessly (as on coins a, b, and c of issue 42, where **ΒΑΣΙΛΕΩΣ** was cut retrograde, as well as misspelled). Another manifestation of the situation was the fact that the once plentiful issues of gold staters were discontinued after having been struck in reduced numbers for some time.

2. The tetradrachms which bore the legend **ΑΛΕΞΑΝΔΡΟΥ** and **ΒΑΣΙΛΕΩΣ** (issues 2, 3, 5, 7, and 8) were used in conjunction with obverse dies I-III (*DTR* V-VII). Stater dies employed for issues 1 and 4 had the same monograms (1 and 6) on their reverses as on tetradrachm issues 2 and 5 and stater issue 6 had the same monogram (10) as tetradrachm

issues 7 and 11 did, so we can place gold die A and silver dies I-IV into a firm sequence.

3. A substantial group of coin issues were linked through the use of the club symbol in a circle (37). Gold issue 35 and silver issues 31-34 and 36-38 all bear this symbol and thus connect stater die E (*DTR* E also) and tetradrachm dies X-XV (*DTR* III and IX-XI).

4. Monogram 22 and its variants 24, 25, and 29 occur on a long series of gold and silver pieces. They form a major grouping of connected issues that include those struck from stater dies B, C, and D (*DTR* A, B, and C) and tetradrachm dies VI-XII (*DTR* I-III) that link issues 14-31 firmly.

5. Monogram 14 and its variants 21, 26, 27, and 28 are also found on another interrelated group of both gold and silver coins. These monograms are also used on reverses of issues 8-10 and 14-22 that are employed with stater obverse dies A, B, and C (*DTR* D, A and B) and tetradrachm obverse dies II, III, and VI-VIII (*DTR* V, VII, I and II).

The information developed from a study of legends and die markings on the reverses of the coins issued by the Tyrian mint, listed in paragraphs 1-5 above, and the resultant obverse and reverse die linkages indicated by this data, form an almost completely interrelated plan for the gold and silver money production there. All five of the stater obverse dies are included in this arrangement sequence, as are all sixteen of the tetradrachm obverse dies, except for die V (*DTR* IV). This die was used to produce issues 12 and 13 and even this die and these issues were brought into the overall linkage sequence as issues 14 and 15 employed the same monogram (20) as issue 13 and both issues 12 and 13 were struck using tetradrachm obverse die V.

Examining the die links closely, it appears that two anvils at least were used to strike the silver tetradrachm issues at Tyre, while another was employed to mint the gold staters there, at least in the early years of its operation under Demetrius Poliorcetes.

THE CHRONOLOGY OF THE TYRE MINT UNDER DEMETRIUS POLIORCETES

When the fortress city of Tyre fell to Alexander the Great in July 332 after a seven month siege, it was in ruins. The Persian mint that

had been functioning there for many years ceased its operations except perhaps for some fractional coinage for local use. Although Tyre was soon recolonized, rebuilt, and refortified by the new Macedonian administration, for some 30 years there was no active major mint there manufacturing imperial gold and silver for Alexander and later for his successors. The nearby mints of Sidon and Ake continued to produce large numbers of silver tetradrachms and some gold staters of the normal Alexander types, which had begun to be struck there even while Alexander was still besieging Tyre. Both of these cities struck dated issues for their Macedonian conquerors. The dated coinage of Sidon began as early as 333/2 while at Ake it had started at least by 327/6. Pieces dated annually continued to be made long after the death of Alexander at these mints, until the one at Sidon was closed after 306/5 and that at Ake after 305/4 by the authorities under the control of Antigonus and his son, Demetrius. A few years later it appears that a mint was opened at Tyre to supply coins for this area of Phoenicia and the surrounding region.

No staters from the mint of Tyre are known from fourth century finds. Not until the Larnaca Hoard from Cyprus, which was buried ca. 300 or a few years later, are they present (*IGCH* 1472, Price 1969:7 ff.). That find originally was composed of more than 1,000 staters, but of the 144 recorded by Price no less than 16 were of Tyrian origin. There also were three dated gold coins from Ake (the latest being from 311/10) and eight from Sidon (the most recent dating from 309/8). No named pieces issued by any of Alexander's successors were present. There are no other published gold stater hoards from this period that contain appropriate Phoenician material. The silver find evidence is more substantial and even more relevant. The very large Aleppo Hoard of 1893 (*IGCH* 1516) from Syria was said to have consisted of over 3,000 tetradrachms and drachms (Newell 1923:10 and 1916:58). Of some 950 coins listed by Newell 33 tetradrachms were from Sidon (down to 308/7) and 82 were from Ake (until 306/5). There were no pieces from Tyre and none bore the name of any of the successors. The hoard was probably interred between ca. 305-300. There also were no tetradrachms of Tyre in the Kuft Hoard of 1874/75 from Egypt (*IGCH* 1670; Nash 1974; Zervos 1980). In excess of 300 tetradrachms came from this find including dated pieces

of Sidon (as late as 312/1) and Ake (down to 310/9), as well as issues struck by Ptolemy as satrap of Egypt between 310 and 305. There were no other issues of the successors. The find is dated between ca. 305-300. Another Egyptian find was discovered at Phacous in 1956 in two sealed jars (*IGCH* 1678a and Jenkins 1960). The part that is of relevance here comprised about 1,200 tetradrachms in one sealed jar, of which 513 were recorded. In this group were 11 dated coins of Sidon (to 306/5) and 46 from Ake (307/6). It also contained 58 satrapal pieces struck by Ptolemy from 310 to 305, but no other named successor issues. This hoard also seems to date from about 305 to 300.

The Phoenician 1997 Hoard (Hersh 1998) was certainly buried about 15 to 20 years later than the silver hoards mentioned in the previous paragraph and at least a decade after the Larnaca Hoard of gold staters. Among the approximately 800 tetradrachms were at least 200 coins of Ake, Sidon, and Tyre. The pieces of Ake in it were dated as late as 308/7, three to four years prior to that mint's closing about 305/4, while the issues from Sidon closed with 306/5, the final year that the mint there was active. The Tyrian pieces in the find included almost the full range of the silver issues struck at that mint starting with issue 2, the earliest tetradrachm one, and ending with issue 41 which was struck bearing the legend of Demetrius Poliorcetes almost at the end of the series. This hoard also contained a number of coins of Seleucus I, mostly from his Asian mints. It is dated to 285 to 280.

Of the 15 obverse silver dies that are catalogued here, only eight were used for more than two different coin issues, and seven appear to have been utilized for one issue only. In view of this and keeping in mind the large amount of obverse die linkage, we seem to be dealing with a coinage minted over a relatively short span, even if our information is not complete. Only obverse dies I, II, VI, VII, X (XIII is X's recut version), and XV were in use over protracted periods of time and there certainly was some parallel usage of dies I and II, VI and VII, and perhaps XIII and XV at different anvils (and possibly in separate workshops at various times). Additionally dies X, XIII (the recut version of X), and XV were clearly used to strike coins when they were in advanced states of deterioration and obviously should have been replaced by new obverse dies. This certainly appears to be visible evidence of economic as well as overall weakness of the political admi-

nistration of Demetrius Poliorcetes, whose military and naval forces after 295 had only Tyre and Sidon as bases in Phoenicia, having lost all of the rest of his Eastern possessions to his enemies.

Newell estimated an average life of two years for both gold and silver obverse dies that struck Alexander's coins and proposed a striking period of 306 to 287 for the Tyre mint. I think that this time frame may be too long for many of the dies used at the Tyre mint, primarily because of the limited employment of obverse dies III, IV, V, VIII, IX, XI, XII, and XIV, which seem to have only been used for a short time. All of these factors lead me to estimate that the coinage of the mint of Tyre under Demetrius was initiated after the battle of Ipsus in 301, when Demetrius and his father lost the battle and Antigonus I was killed, and ended in 286, when the city itself was surrendered to the forces of Ptolemy I.

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THE REIGN AND CHRONOLOGY OF THE ARCHON HYGIAENON

(PLATE 10)

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The Archon Hygiaenon is represented in the numismatic record by a unique gold stater and two silver drachms.

Obv.: Head of ruler without royal diadem r.
Rev.: ΑΡΧΟΝΤΟΣ ΥΓΙΑΙΝΟΝΤΟΣ, below , to l. .

Stater

Rev.: Athena enthroned l., holding Nike and spear, resting l. elbow on shield, in exergue, trident and two dolphins, on throne ΠΑΝ.

1. State Historical Museum Collection (Moscow), 19 mm., 8.39 g. Plate 10, 1. Oreshnikov 1901, 36; Oreshnikov 1912, 41; Shkorpil 1911, 37; Shelov 1956, 184, pl. 2, 107; Anokhin 1986, pl. 5, 148; Karishkovskii 1977, 22-23, pl. 1, 4.

Drachms

Rev. Horseman galloping l. with spear, cape flowing from shoulders, below inscription ΠΑΝ.

2. Cabinet des Médalles, Bibliothèque Nationale, 3.75 g. Plate 10, 2. Muret 1882, pl. 4, 211; Dictionnaire numismatique 1884, 1456, no. 2448; Oreshnikov 1901, 37.
3. The Hermitage, 3.60 g. Plate 1, 3. Shkorpil 1911, 37; Zograph 1951, pl. 42, 19; Shelov 1956, pl. 9, 105; Anokhin 1986, pl. 5, 149.

Some scholars attribute a small copper coin (Plate 10, 4) to Hygiaenon as well (Shkorpil 1911, 38; Zograph 1951, 183; Molev 1994, 12). The coin is now in the Hermitage collection and shows a beardless head on the obverse and the caps of the Dioscuroi on the reverse. In the lower part of the reverse are the letters ΥΓΙΑ. The inscription on the coin is very uncertain and assignment of this coin to Hygiaenon raises a number of problems. Why does the obverse not bear the Archon's portrait, as do the staters and drachms? It has an entirely different face which does not look like Hygiaenon at all. Why is the name of the Archon given in abbreviated form and without his title? Why did Hygiaenon issue a copper coin as small as this and, apparently, in such a small quantity (only one is known today), when there were already sufficient copper municipal issues in circulation (Shelov 1956, 185)? The reverse style of this tiny coin resembles the issues of the Pontic cities during the time of Mithridates VI. Shelov and Golenko have demonstrated that this type with caps of the Dioscuroi appeared on the Bosporian coinage in the two last decades of the second century (Golenko 1955, 137; Shelov 1956, 170; 1983, 40-57). The style and typology of this small copper coin point to a date much later than the gold and silver issues with the name of Hygiaenon.

The Archon Hygiaenon is one of the most mysterious figures in Bosporan history, known only from the tiles with his stamp (found in an archaeological context near Panticapaeum: Macpherson 1857, 72, 11:5; Shkorpil, 1911, 40, 41) and his coins. The coins are related by type to the gold issues of the Spartocids, the ruling dynasty of the Bosporan kingdom. That kingdom was formed in the sixth century B.C. from the independent cities which had been founded by Ionian and Aeolian colonists on the shores of the Cimmerian Bosporus (the modern Kerch Strait). At the end of the fifth century B.C. a dynasty, which Diodorus calls by the eponymous term of the "Archaeanactidae," joined some of these poleis into a vast state with the capital at Panticapaeum and ruled for the next 42 years. The Spartocid dynasty took over in 438/437 B.C. (Diod.XII.31) and ruled for the next three centuries.

During the sixth and fifth centuries B.C., the autonomous municipal issues of Panticapaeum, Myrmecium, Apollonia Tauris, Nymphaeum, Theodosia, and Phanagoria comprised the money circulating in the

Bosporan region. From the second decade of the fourth century B.C., however, the basis of the monetary system was the gold, silver, and copper coins issued by Panticapaeum. In allowing Panticapaeum to strike coins of its own, the Bosporan rulers reserved to themselves supreme control over the issuance of coins. This is indicated by the actions of Leucon II during the Bosporan economic crisis of the third quarter of the third century. He tried to restore normal circulation by issuing bronze coins in three denominations bearing his own name as the king and also added countermarks to the Panticapaeum civic copper (Shelov, 1956, 143). Other Bosporan issues bearing the regal name are the silver coins of Spartocus, the gold coins of Paerisades (paper delivered by this author to the 14th Numismatic Congress held in Berlin) and the gold and silver coins of Archon Hygiaenon mentioned above.

Who was Hygiaenon? Most western European scholars have considered Hygiaenon to be a contemporary of Mithridates VI based on a parallel between the titles of Hygiaenon and Asander (Muret 1882, 211; Imhoof-Blumer 1885, 34, 36; Head 1887, 429; Reinach 1890, 190, 301). The Russian scholars Oreshnikov and Shkorpil dated Hygiaenon's coins to the third century B.C. (Shkopil 1911, 43; Oreshnikov 1912, 41). This date was supported by Zograph and Shelov (Zograph 1951, 184; Shelov 1956, 186). V. Gaidukevich, followed by Anokhin, believed that Hygaienon succeeded to the throne after Leukon II was killed by his wife at the end of the third century B.C. (Gaidukevich 1971, 93; Anokhin 1986, 68). Karishkovskii was the first to date Hygiaenon's stater to the first half of the second century (Karishkovskii 1977, 23, 26). Golenko had assumed that the stater was a forgery and that the silver drachms were struck in the last decade of the second century (Golenko 1982, 55, n. 45). The most recent study was published by Molev, who concluded that Hygiaenon ruled between 145-130 B.C. and that his coins were struck at the end of the third quarter of the second century (Molev 1994, 13, 22). There is clearly a wide disparity among these dates.

The examination of the Hygiaenon stater shows a close similarity to the type of the posthumous staters with the name of Lysimachus struck in Byzantium (Plate 10, 5-7). Hoards and single finds attest that during the Hellenistic period the posthumous Alexander and

posthumous Lysimachus staters became the chief gold trade coin for the Propontis and Pontus (*IGCH* 1973; Pridik 1902, 58-92; Seyrig 1969, 40-45; Karishkovskii 1977, 18, 19) which explains why the gold coinage with the name of the Bosporan rulers imitates and parallels the Lysimachus type. The majority of Lysimacus staters bear special monograms on their reverse which also occurs on the tetradrachms. The occurrence of the same monograms on staters as on tetradrachms, found in dateable hoards, provide the fundamental landmarks for the chronological grouping of the corresponding staters.

Most of the work on the posthumous Lysimachi was done by Henri Seyrig in the publication of the Mektepini hoard discovered in 1956 (Olcay and Seyrig 1965; Seyrig 1968, 183-200). Seyrig classified the staters according to changes in the reverse type. The stater in the name of Hygiaenon belongs to the group which Seyrig dated after 195 B.C. (Seyrig 1968, 199, table). Although Seyrig did not study the second century in detail, his research was continued by other scholars. In 1968 Martin Price, in his study of the coinage of Mithridates, established the chronological parameters for the late tetradrachms from Byzantium (Price 1968, 1-12). A detailed analysis of this group was done by Francois de Callataÿ in his dissertation on the coinage of Mithridates (Callataÿ 1988). The most recent classification of the style and chronology of the Lysimachi from Byzantium was done by Constantine Marinescu in his dissertation (Marinescu 1996). It is clear from Marinescu's work that the Hygiaenon stater has the most noticeable stylistic similarity to the staters and tetradrachms issued between 195-175 B.C. (Marinescu 1996, group VI, issues 92-108). These issues include the gold and silver emissions with monograms which resemble the monograms and style of the tetradrachms found among the coins in the different hoards.

APPROXIMATE BURIAL DATES OF HOARDS

Hoard	*Date*	*Reference*
Mektepini	ca. 190 B.C.	Olcay and Seyrig 1965 (*IGCH* 1410); Marinescu, no. 30, iss. 92-95
Lebanon	ca. 175 B.C.	LeRider 1989, Marinescu, no. 32, iss. 99

Larissa	ca. 165 B.C.	Price 1968 (*IGCH* 237); Marinescu, no. 34, iss. 96 and 106
Ma'Aret En Nu'man,	ca. 162 B.C.	Mattingly 1993, 68-86; *CH* 8, 50, no. 433; Marinescu, no. 36, iss. 106
Asia Minor 1947/8,	ca. 160 B.C.	*CH* 7, 1985, no. 99; Marinescu, no. 38, iss. 93
Babylon	ca. 155-150 B.C.	Regling 1928, *IGCH* 1774; Marinescu, no. 39, iss. 108
Macedonia	ca. 150 B.C.	Thompson 1966, *IGCH* 481; Marinescu 1996, no. 40, iss. 101
Ordu (Trabzon)	ca. 150 B.C.	Boehringer 1970; *CH* 8, 51-52, no. 442; Marinescu 1996, no. 42, iss. 101-5

This dating of Hygiaenon's issue on stylistic grounds is supported by archaeological evidence. In 1911, Shkorpil described an ancient tomb (near Panticapaeum) which contained ten tiles stamped with the name of Hygiaenon and a hydria covered by a metallic light varnish with an ithyphallic handle (Shkorpil 1911, 41-43). This type closely parallels the pottery of Priene and the second century relief ceramic of Pergamon (Wiegand and Schrader 1904, 413, no. 537, 410, no. 56; Hubner 1993). In the northern Black Sea area an ithyphallic handle was found in the excavation of Nymphaeum (Crimea) with coins dated between 200-121 B.C. A hydria with the figure of Priapus was also found in the Artjukhov kurgan in 1879 on the Taman peninsula (Maksimova 1979, 120, no. 123). In the same tomb of the Artjukhov complex were also found a Pergamone amphora (Maksimova 1979, 112, 114, pl. 53, Art. 78) and an amphora with twisted handles made in the Attic tradition (Maksimova 1979, 114, 115, pl. 52, Art. 86). These types combine both early and late characteristics (Knipovich 1949, 275; Maksimova 1960, 57). Professor Susan Rotroff suggested that these types of ceramics are no earlier than the middle of the second century B.C. (Rotroff 1996). Another find from the Artjukhov tomb is a silver kantharus decorated with curved acanthus leaves (Maksimova 1979, 78, 79, pl. 24, no. 61). This motif, which was used on the earlier relief bowls, dates from around 175-150 B.C. (Lamonier 1977, pl. 3, 4, 52, etc.; Rotroff 1982, no. 372; Edwards 1986, 402, n.

84). A very similar motif is used on a silver kantharus from Tarentum, dating from 250-150 B.C. (Pfrommer 1987, pl. 31, no. 45). Among the ceramics and toreutics in the Artjukhov barrow were found a posthumous Lysimachus stater from Byzantium and a stater of Bosporan king Paerisades (Maksimova 1979, 50, 51, pl. 7, no. 41, no. 82). Henri Seyrig dated the Lysimachus stater to around 160 B.C. (Maksimova 1967, 242). It was struck with the same obverse die as the staters from the Tuapse hoard which had a burial date of ca. 150-140 B.C. (Zograph 1925, 46; Marinescu 1996, issues 132-35, no. 44.)

The artifacts found in Artjuhov kurgan show a wide disparity of dates and chronologically represent the period 175-125 B.C. The dating of the Artjukhov barrow finds allows a dating of the hydria found in the Kerch tomb, along with the tiles bearing Hygiaenon's stamp. But this date can be narrowed further by another artifact found in the tomb with Hygiaenon's tiles. Shkorpil described this artifact as "a coin in bad condition" (Shkorpil 1911, 43). He referred to the type illustrated in Byrachkov's catalogue, which was published in Odessa in 1884 (Byrachkov 1884, pl. 33, 189). On the obverse is the head of a bull, and on the reverse an ear of wheat and plow with the letter Π (Panticapaion, Byrachkov read TI). Golenko and Shelov have studied the chronology of the Bosporan copper. They have attributed this small copper coin to 225-175 B.C. (Golenko 1955, 135, pl. 56, 1; Shelov 1965, 37, 40, table 4). The actual date for the tomb with Hygiaenon tiles is probably closer to the first quarter of the second century.

From the comparative analysis of numismatic sources and archaeological finds we can date the reign of Hygiaenon to the first quarter of the second century B.C. From the epigraphic evidence we know that from the beginning of the second century, Spartocus V (200-180 B.C.), his daughter Camasarye, her husband Paerisades III (180-170/160 B.C.), and their son Paerisades IV (160-145 B.C.) ruled successively (*CIRB* 26, 75, 753, 1044; *SIG* 439; Vinogradov 1987; Molev 1994, 22). Queen Camasarye was named as the donor of the Didyma temple near Miletus in 178/177 and her husband Paerisades III was mentioned as the donor of the same temple in 177/76 B.C. (Rehm 1958, 273 ff). Her son, Paerisades IV uses the titles "Philometor" and mentions his relationship to his mother and the Bosporan royal family (*CIRB* 75).

Yet it is interesting that Paerisades III is never mentioned as a scion of Bosporan royal house. This led Latishev and Vinogradov to suggest that the father of Paerisades III was never king (Latyshev 1909, 302), that he was only the brother of Spartocus V (Vinogradov 1987, 63). But because Spartocus V had only a daughter, the Bosporan Kingdom for the first time lacked a male heir (Vinogradov 1987,64). This suggests that when Camasarye became queen in 180 B.C. after her father's death, for the short period before her marriage with her cousin Paerisades III, she was supported by an eminent member of the Bosporan aristocracy, Hygiaenon. He was not a member of the royal house and could not use the title ΒΑΣΙΛΕΩΣ, nor could he be depicted with a diadem. But a hint of his military glory still exists on his silver coins.

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NOTES ON SOME IMITATION DRACHMS OF DEMETRIUS I SOTER FROM COMMAGENE

(PLATES 10–12)

OLIVER D. HOOVER

By the beginning of the present century it had become clear to numismatic scholars[1] that, in addition to the official silver drachms of Demetrius I Soter (162-150 B.C.) issued at Antioch-on-the-Orontes and bearing the obverse type of the diademed king and the reverse type of a single cornucopia,[2] a series of barbarous imitations also circulated in the hellenistic Near East. In 1910 B. V. Head simply noted in the section of *Historia Numorum* devoted to the coinage of Demetrius I, that, "barbarous imitations of the drachm with *rev.* cornucopiae are fairly numerous."[3] With this authoritative yet somewhat bald state-

[1] A great debt of gratitude is owed to Arthur Houghton for his constant encouragement and access to the extensive material in his collection (AHNS, Collection of Arthur Houghton, New Series), without which this study would not have been possible. I would also like to thank Carmen Arnold-Biucchi for her help with material belonging to the American Numismatic Society and Angelos Chaniotis for sharing his thoughts on the epigraphic peculiarities of some of the coins. All plate photography has been done by Wayne Moore.

[2] Arthur Houghton, *Coins of the Seleucid Empire from the Collection of Arthur Houghton* (New York, 1983, hereafter *CSE*), nos. 155-57, 161-63; E. T. Newell, "The Seleucid Mint of Antioch," *American Journal of Numismatics* 15 (1917-18), nos. 109-10, 114-16, 120-22, 126-27, 133-34.

[3] B. V. Head, *Historia Numorum* (New York, 1910), p. 764.

ment he managed to encapsulate the sum total of all the current knowledge of these peculiar imitation drachms.

Unfortunately, in more than eight decades since Head produced his monolithic work, almost no certain evidence, beyond what might be provided by the individual coins themselves, has come to light which might contribute to our understanding of either the purpose or the area of circulation of the imitations. There are currently no documented hoards that contain examples of these coins, and yet it seems extremely likely that hoarding did take place. Coppery toning and copper surface encrustation on many of the known specimens suggest the possibility that they may have been deposited with copper coins or, perhaps more likely, enclosed in a metal container. The fact that when the coins appear on the market multiple examples, rather than single pieces,[4] are usually offered for sale also seems to imply that they may ultimately derive from hoard material. Nevertheless, even if hoarding could be proven with certainty from the known imitations of Demetrius I we would still, like Head, be at a great loss with regard to specific find sites. The coins are not even known from chance finds in archaeological excavations.

Some information has been emerging thanks to the help of reputable numismatic dealers with some general knowledge of the regions where their respective suppliers were finding the imitation coins. Northern Syria and eastern Turkey seem to be the geographical areas from which this material is emerging, and particularly those areas corresponding to ancient Cappadocia and Commagene.[5] Thus, with this vague information we have progressed a little further in our knowledge than Head was able to do 87 years ago. But to create a somewhat

[4] Cp. Italo Vecchi, Oct. 6, 1997, 425-26; Classical Cash 1, May 13, 1995, 180-82. Here IC.a31p32; IIA.A1p1; and IIIB.a8p14, a9p16, a10p17 respectively. Over 100 are said to have arrived at Leu Numismatics, Ltd. in a single lot along with official Antiochene drachms of Demetrius I in 1986 according to private correspondence between Simon Bendall of A. H. Baldwin and Sons, Ltd. and Arthur Houghton, January 30, 1987.

[5] Private correspondence between Simon Bendall of A. H. Baldwin and Sons, Ltd. and Arthur Houghton, January 30, 1987.

clearer picture, we must look to the clues provided by the coins themselves.

Weights, Flans, and Survival Rates

Once they have been broken down into four series based on their reverse inscriptions the Demetrius imitations can be placed into a rough chronological order based on a decline in weight. The coins of series I which range from 4.18 to 1.74 g and are struck on relatively thick flans are close to the Attic weight standard used by the Seleucids and many could probably have passed in circulation alongside the official drachms of Demetrius I. Those of series II, using thinner flans and weighing between 2.11 and 0.81 g are not likely to have survived outside of a small local economy. The same is true of series III and IV which are struck on extremely thin flans, often of debased silver, and weigh between 1.60 and 0.66 and 2.53 and 0.36 g respectively. Because of the very low weights of the majority of the coins it seems likely that they are the result of an organized but impoverished mint rather than the fruits of forgery. No one could be tricked into believing that the coins of series II-IV were official Seleucid issues.

Adding to this theory that some greater authority must be behind the Demetrius imitations is the large number of dies involved in production. A total of 125 different obverse dies are currently known, far more than would be used by the most prolific of forgers. Indeed, the number of dies actually used may be far greater, as we can see when we chart the coins on the Raven index.[6] This index makes it possible to quantify the survival rate of the coins based on the relationship of the number of known coins to obverse dies.[7]

[6] E. J. Raven, "Problems of the Earliest Owls of Athens," in C. M. Kraay and G. K. Jenkins, eds., *Essays in Greek Coinage Presented to Stanley Robinson* (Oxford, 1968), p. 42; W. E. McGovern, "Missing Die Probabilities, Expected Die Production and the Index Figure," *ANSMN* 25 (1980), pp. 209-23.

[7] The following table is patterned after the one that appears in B. Kritt, *The Early Seleucid Mint of Susa* (Lancaster, 1997), p. 67.

SURVIVAL RATES OF THE DEMETRIUS I IMITATIONS

Group	Number of Coins	Number of Obv. Dies	Raven Index
IA	12	12	1
IB	23	14	1.64
IC	6	6	1
IIA	12	6	2
IIB	3	2	1.5
IIIA	13	7	1.85
IIIB	9	6	1.5
IIIC	2	2	1
IVA	76	59	1.28
IVB	4	4	1
IVC	3	3	1
IVD	4	4	1
Totals:	167	125	1.33

When the index indicates a number of 2 or less, McGovern has shown that it is likely that additional dies were used and that the number of lost dies is often the same as the number of known dies.[8] Thus in the case of the Demetrius imitations close to 250 dies may once have existed, suggesting a long period of issue and the resources and organization provided by a relatively strong ruler. One suspects that such an extensive series could not have been issued by minor princelings or small-town civic authorities.

Epigraphy

Although it is rare in numismatic discussions to dwell at length on the character of the epigraphy and the typology of the letter forms used in coin legends, in the case of the Demetrius I imitations such considerations provide the key to securing the specific geographical area of their origin and offer valuable dating criteria.

[8] McGovern (above, n. 6), p. 222.

With the exception of the coins in series I, which closely imitate the typical letter forms and style found on the official drachms of Demetrius I, those of series II-IV are notable for their frequent use of cursive letter forms in place of the more traditional classical forms. Where we might expect to see letters such as four-bar sigma (Σ), epsilon (Ε), and omega (Ω) on an official drachm, on the imitations of these three series they are frequently replaced by lunate sigma (C),[9] lunate epsilon (ϵ)[10] and cursive omega (ω),[11] respectively. While it is not entirely unknown for official Seleucid coins to use a single cursive letter form on occasion, they virtually never employ multiple cursive forms in the same inscription.[12]

In fact, the feature of two or more cursive forms in the same inscription is uncommon in both numismatic and lapidary inscription of the high hellenistic period and is normally thought to be an indicator of a late date (first century B.C./A.D. or later).[13] A date in the first century B.C. would make a good deal of sense for the coins in series II-IV because according to the Seleucid dates (ΞΡ and ΑΞΡ) that appear on the imitations of group IA they could not have been issued before 153/2 B.C. and in all likelihood were issued at some time after this date.[14]

Upon close inspection it will be noted that in addition to the host of cursive letter forms mentioned above, a number of the inscriptions in series III and IV also use the peculiar letter form known as angular sigma ([). This particular form is especially important because in the

[9] IIA.p1-5, IIB.p9; IIIA.p1, p3-5, p7; IIIB.p12, p14; IVA.p3, p6, p8, p13-14, p27, p33, p35, p48, p52, p58.

[10] IIIA. p1, p4-5, p8-9, IIIB. p12, p14; IIIC.p21; IVA. p12-13, p29, p35, p38, p59.

[11] IIIA.p1; IVA. p57.

[12] See E. T. Newell, *The Coinage of the Eastern Seleucid Mints from Seleucus I to Antiochus III* (New York, 1938), nos. 669, 674-75, 735-36; E. T. Newell, *The Coinage of the Western Seleucid Mints from Seleucus I to Antiochus III* (New York, 1941), no. 1571.

[13] A. G. Woodhead, *The Study of Greek Inscriptions* (Cambridge, 1981), pp. 64-65.

[14] It is uncertain how long it would have taken the official drachms issued at Antioch to reach places like Cappadocia and Commagene which at the time of Demetrius I Soter had ceased to be parts of the Seleucid Empire. One also suspects that the official coins must have circulated for some time before they became popular enough to warrant large scale imitation.

late hellenistic period it is virtually unique to a single location in the Greek east, Commagene. Although it appears almost nowhere else before the second century A.D., angular sigma was an extremely popular letter form in first century B.C. Commagene. It is prominent on the royal bronze coinage issued by the Orontid king of Commagene, Mithradates I Callinicus (96-70 B.C.), as well as on the civic coinage of Samosata, thought to have been issued under his successor, Antiochos I Theos (ca. 69-ca. 32 B.C.).[15] Likewise, when the lapidaries of the latter king carved the massive inscriptions onto the walls of his famous *hierothesion* atop Nemrud Dağ angular sigma was the letter form of choice.[16] Thus the suspicions of the dealers mentioned above are proven to be correct by the coins.

The quality of the inscriptions is worth noting because they seem to betray the work of native die engravers who were largely illiterate in Greek, judging from the vast number of mistakes that they make in rendering the characters. The occasional substitution of eta (H) for (E) in group IB may reflect local dialectical peculiarities, but may also be a simple engraving error.[17] Letters and sometimes whole words are inscribed either backwards or upside down, and sometimes even both.[18] Frequently the lettering is so confused that it is difficult to be sure that the die engraver is actually trying to render Greek and not just a decorative pattern with a Greek flavor.[19] The latter seems to be the case especially on the coins of series IV where it is impossible to decipher the apparently random letters.

This peculiarity illustrates the importance placed on hellenization by the authority responsible for the imitation issues. Even when the die engravers were incapable of producing readable Greek legends apparently they were still required or felt compelled to use forms and

[15] P. Z. Bedoukian, *Coinage of the Armenian Kingdoms of Sophene and Commagene* (Los Angeles, 1985), nos. 20, 23-24; *BMCGalatia*, p. 104, nos. 2-3.

[16] L. Jalalbert and R. Mouterde, eds., *Inscriptions grecques et latines de la Syrie*, vol. 1 (Paris, 1929), nos. 11-13; W. Dittenberger, ed., *Orientis Graeci Inscriptiones Selectae*, vol. 1 (Leipzig, 1903-5), nos. 383, 390.

[17] IB.p27-28.

[18] See IB.p17, p25; IIA.p3, p6; IIIA.p10; IVA.p1.

[19] See series IV in general. IVA.p19 gives the impression of a decorative inscription that mirrors itself on each side of the reverse type.

shapes that at least suggested Greek characters. Perhaps this is not too surprising in a realm where native kings like Antiochus I Theos habitually appended the name, philhellenos, to their catalogues of titles and falsely claimed descent from Alexander the Great.[20] The non-Greek inhabitants of neighboring states like Cappadocia, Sophene and Greater Armenia had been showing an interest in publicly displaying their hellenization through the use of Greek inscriptions since at least the third century B.C.[21]

Because the seriousness of the corruption of the Greek is greater or lesser depending on the series it is possible to place the coins in an order based on the progressive degeneration of their inscriptions. In general they follow the same pattern that we saw with regard to weight reduction. Series I again comes first because the inscriptions are almost universally readable with good classical letter forms. A few letter and word reversals occur, but not many. In series II the letters and words remain fairly well rendered, but illegible corruptions begin to appear and in series III much more corruption is apparent although the proper rendering of the inscription can still be guessed at. By the time we reach series IV it is impossible to tell what the inscriptions are meant to relate to the reader, if anything.

Types

With the exception of the coins of group IC there is very little that needs to be said about the types employed by the die engravers. They are, in general, as Head described them: barbarous versions of the types used by Demetrius I Soter at Antioch-on-the-Orontes. The obverse depicts the diademed head of the ruler facing to the right while the reverse shows a single cornucopia flanked by inscription on the right and left.

All the coins in the various series have the cornucopia reverse in one form or another, but in a few instances the obverse types deviate from

[20] Jalalbert and Mouterde (above, n.16), nos. 1. ll. 3, 29-30, 3, 5, 7-8, 14-18, 22, 24, 26-27.

[21] S. Sherwin-White and A. Kuhrt, *From Samarkhand to Sardis: A New Approach to the Seleucid Empire* (Berkeley, 1993), p.196.

the standard depiction of the ruler. In group IIIC the obverse die a14 does not show a diadem and adds a pendant earring to the portrait head, making it unclear exactly who is meant to be depicted. On the one hand the absence of the diadem could be a simple oversight, but on the other hand it could be intentional, in which case the head could represent just about any male, human or divine. Likewise in group IVD all the obverse dies bear portrait heads which face to the left in a manner reminiscent of Parthian practice rather than to the right in accordance with Seleucid custom.[22]

While it is clear from the relatively high quality of the portraits in group IA that they were copied directly from examples of the official coins produced at Antioch for Demetrios I, the coins of the later groups suggest that many are copies made from copies rather than from original Antiochene drachms. In fact, the process of abstraction and barbarization of the obverse image can be traced through close attention to the execution of the portrait head's hairstyle. When this is done three main stylistic groups appear, namely a group in which the curls on the ruler's neck are emphasized and increasingly abstracted,[23] a group in which the hair is abstracted to look like puffed balls[24] and a group which may have grown out of the preceding, in which the hair is composed of thick string-like elements.[25] The first group can be traced back to a tendency that first appears in IB.a24 and from thence forward becomes increasingly emphasized and stylized to the point where the hair of the ruler portrait on IIIA.a7 begins to look like a giant spring of curls rather than a naturalistically curly coiffure. Similarly, in the second group, the earliest examples depict a puffy, rounded head of hair which easily devolves into a bizarre collection of unconnected circular and ovoid shapes as on IIA.a5.

The most interesting die in the imitation series, however, is IB.a25, which is not intended to represent the ruler, but is actually a barbarous version of the young Herakles that is universally recognized as the

[22] D. Sellwood, *An Introduction to the Coinage of Parthia* (London, 1971), p. 7.
[23] IA.a24; IIA.a1, a4; IIIA.a6-a7; IVA.a6, a15, a52, a56.
[24] IIIA.a1-a2; IIIC.a14; IVA.a11-a12.
[25] IVA.a19-a25, a28-a30, a41-a42.

obverse type of Alexandrine coinage. The great question, of course, is what it is doing in place of the more usual ruler portrait. To solve this problem several possibilities can be suggested. Either the die engravers or the authority behind the issue may have thought that the addition of the well recognized and respected Alexandrine type would make the low weight drachms more easily accepted. More likely, it should be seen as a reference to the royal house of Orontes which had ruled in Commagene since the second century B.C. and claimed Herakles (Artagnes-Ares) as a divine ancestor. Both Mithradates I Callinicus and Antiochus I Theos are shown on reliefs at Arsameia and Nemrud Dağ shaking hands with the hero. Later, thanks to his father's marriage into the Seleucid dynasty and creative genealogy Antiochus I was also able to claim Alexander the Great as an ancestor.[26]

Control Marks

The control marks which appear only on the coins of groups IA-IB are generally imitations of controls used at the contemporary mint of Antioch. Those in group IA are extremely good copies of control marks taken directly from original official coins while those found on the coins of group IB are primarily corrupt versions of the common Antiochene alpha-pi monogram (). On the latter, the alpha-pi is frequently rendered as pi with a central dot, dash, or dashes ( , ).[27] The monogram,  , occurs on IB.p28 which may be a corrupt version of Antiochene  .[28] Occasionally other controls appear, such as  (IB.p17),  and the variants and  (IB.p16-p17) which seem to be particular designations in the Commagenean mint and are not derived from Antiochene controls.

Names and Titles

The use of names and titles other than King Demetrius Soter is problematic as well as instructive. If the imitation coins were struck by forgers with the intention to deceive it makes absolutely no sense

[26] Jalalbert and Mouterde (above, n.16), no. 24.
[27] IB.p13-p14, p18, p22, p24, p26.
[28] Newell (above, n. 2), nos. 115 and 121.

that they should reproduce any other inscription on the coins than the official and expected **ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙΟΥ ΣΩΤΗΡΟΣ**. The absence of this inscription would easily alert a wary handler of the coin to its unofficial nature, assuming that its low weight had not already given it away. Thus it seems likely that the imitations of Demetrius I were not illegal forgeries but rather coins issued for use in the local Commagenean economy. The situation seems to be similar to the case of the imitation Susian victory coinage of Seleucus I Nicator that was produced to fulfill local needs in Baluchistan during the third century B.C.[29] The die cutters of Baluchistan replaced the royal name **ΣΕΛΕΥΚΟΥ**, normally found on the victory issues of Susa,[30] with **ΑΝΤΙΟΧΟΥ**, apparently to recognize the accession of Seleucus's son, Antiochus I Soter (281-261 B.C.).

Although the Baluchistan imitations provide a good model for the changes to the inscription that are found in series II and III they also lead to a serious difficulty. The Baluchistan coins understandably change the legend in order to honor the new Seleucid authority over them. However, when the Commagenean die engravers changed the inscriptions of the Demetrius I imitations, the new names and titles do not match well with any known Seleucid monarch or independent dynast of the late second or first century B.C. In series II the inscriptions read either **ΒΑΣΙΛΕΩΣ ΝΙΚΑΤΟΡΟΣ** (IIA) or **ΒΑΣΙΛΕΩΣ ΒΑΣΙΛΕΩΝ ΝΙΚΑΤΟΡΟΣ** (IIB) and those of series II read **ΒΑΣΙΛΕΩΣ ΣΕΛΕΥΚΟΥ**.

The name, Seleucus, immediately presents itself as a possible link to the accession of a Seleucid ruler parallel to the situation we find on the Baluchistan coins. Unfortunately, the only Seleucid kings known to have ruled after Demetrius I Soter were Seleucus V (126/5 B.C.) and Seleucus VI Epiphanes (96-95 B.C.), neither of whom seem very likely candidates for the title **ΒΑΣΙΛΕΩΣ ΣΕΛΕΥΚΟΥ** on the Commagenean coins. Almost as soon as Seleucus V had assumed the diadem in Antioch he was killed by his mother, and Seleucus VI, fleeing the army of Antiochus X Eusebes in 95 B.C., settled in Mopsuestia where

[29] A. Houghton, "Notes on the Early Seleucid Victory Coinage of 'Persepolis'," *SNR* 59 (1980), pp. 11-13.

[30] For this series in general see now Kritt (above, n. 7), pp. 11-19, 31-32, 53-56.

he died later the same year following a civil uprising.[31] While it is true that in 96 and 95 B.C. Seleucus VI struck tetradrachms at the Cilician mints of Soli and Seleucia-on-the-Calycadnus which listed the epithet, ΝΙΚΑΤΟΡΟΣ, among his titles, it seems highly unlikely that he can be behind the changes either to ΣΕΛΕΥΚΟΥ or ΝΙΚΑΤΟΡΟΣ on the Commagenean issues. His influence in the independent kingdom of Commagene cannot have been great and in any case the bulk of his coinage probably tended to move south in order to fund his campaign for the recovery of Antioch.[32] Thus we are still left with the question of who the Seleucus mentioned on the Demetrius I imitations might be. A local ruler employing the Seleucid dynastic name is certainly a possibility since Seleucus became a popular Greek name in the Near East and Asia Minor during the later hellenistic period.

The same problem of identity also remains with regard to ΝΙΚΑΤΟΡΟΣ, which always appears alone on the Commagenean coins, without any additional proper name as is customary in Seleucid coin inscriptions. This peculiarity may suggest that the title has been adopted as a proper name by the unknown king. Although they are not common in the third century B.C. and later, individuals can be discovered bearing the name Nicator as a proper name.[33] Perhaps Nicator should be understood as the name of some otherwise unrecorded local dynast of Commagene.

The one great problem with this hypothesis is the use of the old Achamenid Persian title, ΒΑΣΙΛΕΩΣ ΒΑΣΙΛΕΩΝ, "King of Kings," in series IIB. It is very difficult to believe that some minor local Commagenean ruler would dare to precede his name with this ancient and respected designation, especially in the first century B.C. At that time it was the special prerogative of the Arsacid Parthians and of the Arta-

[31] App. *Syr.* 69; Just. 39.1.7; Joseph., *AJ* 13.268, 367-368.

[32] Houghton (above, n. 2), p. 24; A. R. Bellinger, "The End of the Seleucids," *Transactions of the Connecticut Academy of Arts and Sciences* (June 1949), p. 73, n. 64.

[33] P. M. Fraser and E. Matthews, *A Lexicon of Greek Personal Names*, vol. 1 (Oxford, 1987), s.v. Νικάτωρ. It should also be noted that the title was so easily understood as a proper name by the time of Appian's writing that it could be mistaken for the name of Seleucus I's enemy, Nicator, thereby creating a fanciful explanation for the origin of Seleucus's epithet (App. *Syr.* 57).

xiad kings of Armenia after Tigranes II's victory over the Parthians in 85 B.C.[34] Commagene was under the overlordship of the Artaxiads for most of the first half of the first century B.C. and throughout that century were subject to Parthian influence,[35] making it impossible for a minor local ruler to employ the title without risking the displeasure of greater powers. Plutarch tells us that Tigranes II was especially attached to the title and flew into a rage when the Roman consul, L. Licinius Lucullus, refused to use it when he addressed him.[36] Even a relatively strong national king of Commagene like Antiochus I Theos avoids the title for himself, preferring the much more innocuous **ΒΑΣΙΛΕΥΣ ΜΕΓΑΣ**, "Great King." **ΒΑΣΙΛΕΥΣ ΒΑΣΙΛΕΩΝ** is respectfully reserved for references to the supposed Achamenid ancestors of the Orontid royal family of Commagene.[37] When these problems with the use of **ΒΑΣΙΛΕΩΣ ΒΑΣΙΛΕΩΝ** are taken into consideration it seems difficult to accept the idea of **ΝΙΚΑΤΟΡΟΣ** as a reference to an unknown dynast living in the first century B.C. And if **ΝΙΚΑΤΟΡΟΣ** is not a living individual, we should also be cautious about accepting **ΣΕΛΕΥΚΟΥ** as a living individual without further corroborating evidence.

A possible solution to this dilemma can still be found to explain both the names and titles without assuming the existence of otherwise unknown local dynasts. It may be that the inscriptions are intended to serve some sort of commemorative purpose. Both the names Seleucus and Nicator were borne by the illustrious founder of the Seleucid royal house, who also happened to be respected as a founder of the Commagenean Orontid dynasty, thanks to the marriage of Mithradates I Callinicos to a daughter of Antiochus VIII Grypus in 96 B.C.[38] The epigraphical evidence from Nemrud Dağ, including a genealogy tracing the Orontid-Seleucid line back to Seleucus I Nicator, indicates that Antiochus I Theos had great respect for his matrilineal

[34] P. Z. Bedoukian, *Coinage of the Artaxiads of Armenia* (London, 1978), p. 13.

[35] Antiochus I Theos of Commagene had a reputation for aiding the Parthians in their inroads against the Roman Near East (Cicero, *ad fam.* 15.1.2).

[36] Plut. *Lucull.* 21.7.

[37] Jalalbert and Mouterde (above, n. 16), no. 14.

[38] E. R. Bevan, *The House of Seleucus*, vol. 2 (London, 1902), p. 258.

Seleucid heritage.[39] The combination of ΒΑΣΙΛΕΩΣ ΒΑΣΙΛΕΩΝ with ΝΙΚΑΤΟΡΟΣ might be an attempt to link the two great bloodlines of the Orontid dynasty, for not only did the Commagenean kings claim descent from Seleucus I Nicator, but also from the Achamenid King of Kings, Darius the Great.[40] Such commemoration of famous Orontid ancestors would be highly appropriate on imitations of Demetrius I because in the simple act of continuing his types the minters memorialized the foundation of Commagene as an independent kingdom. Early in Demetrius's reign (ca.163/2 B.C.) the Seleucid satrap and member of the Orontid house, Ptolemy, declared his independence and established the kingdom of Commagene.[41] There is no evidence that Demetrius I Soter ever attempted to recover the rogue satrapy.

The Orontid Dynasty and Coinage

Ptolemy's badly documented escape from Seleucid hegemony is somewhat unusual because upon gaining independence the rebel satrap failed to immediately issue coins in his own name, thereby failing to present himself as a legitimate ruler to his subjects. Indeed, to date, no coins of any kind have been discovered bearing the personal types and name of Ptolemy.[42] This may be due to the fact that Ptolemy, unlike most breakaway rulers of former Seleucid satrapies, never seems to have adopted the royal title. He simply remained a powerful pariah, a free satrap.

As a new and independent ruler Ptolemy must have needed to produce coinage at some point in his reign. His brief invasion of Cappadocia and assault on Melitene shows that he was active militarily and therefore probably needed money of some sort to pay his troops.[43] The sudden appearance of the Demetrius I imitations of group IA in Commagene sometime after 153/2 B.C. with no known authority behind their issue along with the fact that Ptolemy did not strike

[39] Jalalbert and Mouterde (above, n. 16), nos. 25-26.

[40] F. K. Dörner, ed., *Kommagene: Geschichte und Kultur einer antiken Landschaft* (Zürich, 1987), pp. 26-31; Jalalbert and Mouterde (above n. 16), no. 14.

[41] Diod. 31.19a; M. Cahin, *The Kingdom of Armenia* (New York, 1987), p. 218.

[42] Bedoukian (above, n. 15), p. 16.

[43] Diod. 31.19a.

coinage in his own name suggests the strong possibility that the coins of this group may have been struck under Ptolemy himself. The weights of the coins in group IA, ranging from 4.18 to 3.70 g, also contribute to this theory because they imply the use of the Attic standard, which was employed by the official Demetrius drachms of Antioch, thereby pointing to an early date of issue when Commagene was still fairly close to the Seleucid economic sphere. Such a time was the reign of Ptolemy, when the state was independent but not yet so independent that its ruler could risk upsetting the legitimate economic and political systems already established by the Seleucids. Since already in group IB the standard had dropped to almost half of what was acceptable for an Attic weight drachm it is unlikely that it or any of the later series can be attributed to this ruler.

Unfortunately, while the evidence for Ptolemy as the originator of the Demetrius imitations seems fairly solid, we are still left with the problem of who was responsible for groups IB to IVD. Unlike Ptolemy, most of his immediate successors issued bronze coins in their own names with the royal title,[44] making it difficult to decide to whom, if any of them, the later imitations should be assigned.

The "commemorative" coins of series II and III, by their nature should possibly be linked to the time of Antiochus I Theos because of his strong proclivity for advertising the Seleucid ancestry of the Orontid house on his stone monuments. Likewise, the use of angular sigma in group IIIA tends to support this view, although an argument might also be made for Mithradates I Callinicus. It is not entirely impossible that the "commemoratives" refer to his marriage to Laodice Thea, the daughter of Antiochus VIII Grypus.

This leaves groups IB-ID and series IV to be accounted for. Unfortunately, it is not possible to link these coins to particular rulers with any degree of accuracy. All that is certain, thanks to the evidence provided by the study of the weights and corruption in the inscriptions, is that groups IB-IC must follow group IA and precede series II-IV. Similarly series IV must follow series I-III. Therefore we can tentatively suggest that groups IB-IC may have been issued during

[44] Bedoukian (above, n. 15), nos. 20-27.

the reigns of Ptolemy's successors, Samos II (ca. 140-ca. 130 B.C.) and Mithradates I Callinicus (96-70 B.C.).

If series II and III do belong to Mithradates, or more likely Antiochus I, series IV should probably also be assigned to Antiochus or his successors who ruled until Commagene was absorbed as a Roman province in 17 A.D. The latter are not known to have struck any coinage in their own names, much like Ptolemy. The extremely low weight and barbarous quality of the coins in series IV strongly suggest economic hardship and minters rushing to produce coinage, making it tempting to link the series to Antiochus's troubles with the Romans. In 64 B.C. he was forced to defend himself against Pompey the great and in 38 B.C. he vainly attempted to hold Samosata against the combined forces of Ventidius Bassus and Marc Antony who wished to punish him for his complicity with the Parthians.[45]

This is an interesting detail because the coins of group IVD carry the obverse type of a left facing portrait head, a stylistic feature that may have been borrowed from the Parthians. Most hellenistic Greek portrait coins and especially those of the Seleucids show the head facing to the right. It may also be worth noting that according to Plutarch at the conclusion of the siege of Samosata Antiochus was required by the Romans to pay an indemnity of 300 silver talents.[46] One suspects that such a heavy financial burden (assuming that it is not a later fabrication) would have drained much of the good silver from the coffers of Commagene, leaving Antiochus to issue many of the pathetic coins of series IV for local usage. This might also account for the apparent use of low grade silver and silver washed copper cores (group IVC) for this series. It is hardly likely that the silver washed pieces could be the work of forgers since there is virtually no chance that the light weight coins could circulate outside of the local Commagenean economy.

The generally low weights of earlier series (IB-III) may be the result of the almost constant warfare that overtook Commagene in the first century B.C. Unfortunately, Commagene occupied a pivotal position in

[45] App. *Mithr.* 106; Cassius Dio, 49.20.3.5, 22.1.2; Joseph. *AJ* 14.439-447, *BJ* 1.321-322.

[46] Plut. *Ant.* 34.

the Mithradatic Wars between Rome and Mithradates VI of Pontus and the Roman campaigns against Tigranes II of Armenia, as well as various Parthian adventures, and therefore was frequently at risk of plunder by Roman and eastern armies crossing the Euphrates. Assisting in the support of such armies as they traveled through Commagene must have been an extremely expensive prospect and may have led to the economic crisis or crises that resulted in the progressive debasement and weight reduction of the coinage.

CATALOGUE

Series I: In the Name of Demetrius I

Group A: Dated, with Control Marks

Obv.: Diademed head of Demetrius I r., border variable. Style ranges from good to barbarous.

Rev.: ΒΑΣΙΛΕΩΣ on r., ΔΗΜΗΤΡΙΟΥ ΣΩΤΗΡΟΣ in two lines on l., cornucopia.

Æ Drachms

Year S.E. 160=153/2 B.C.

a1	p1	↑	3.98	To r., 𐅄 H above ΞP. AHNS 800.177.
a2	p2		3.96	To r., 𐅄 AP above ΞP. Baldwin & Sons, 1987.

Year S.E. 161=152/1 B.C.

a3	p3		3.97	To r., 𐅄 𐅅 above AΞP. Giesseuer Münzhandlung 30, Nov. 1987, 238.
a4	p4		3.70	To r., 𐅄 HP / above AΞP. Telli, Oct. 1987.
a5	p5		3.81	To r., 𐅄 𐅅 above AΞP. G. Hisec 148, 27 Nov. 1985, 116.
a6	p6		3.97	To r., 𐅄 𐅅 above AΞP. Lanz 36, 21 Apr. 1986, 484.
a7	p7		3.98	To r., 𐅄 AP above AΞP. Baldwin & Sons, 1987.
a8	p8		3.90	To r., 𐅄 AP above AΞP. Baldwin & Sons, 1987.
a9	p9		3.86	To r., 𐅄 𐅅 above AΞP. Baldwin & Sons, 1987.

a10 p10 ↑ 3.81 To r., 🏛 ? above AΞP. AHNS 800.188.

Group A: Uncertain Date

a11 p11 3.56 To r., 🏛 ? above worn date. Baldwin & Sons, 1987.

a12 p12 4.18 To r., 🏛 AP above worn date. Baldwin & Sons, 1987.

Group B: Undated, with Control Marks

Obv.: Diademed head of Demetrius I r., border variable. Style ranges from good to barbarous.

Rev.: BAΣIΛEΩΣ on r., ΔHMHTPIOY ΣΩTHPOΣ in two lines on l., cornucopia.

Æ Drachms

a13 p13 ↑ 3.95 ...AΞIΛEΩ...ΔHMHTI...ΣΩTHIIO... To r., 🏛. AHNS 800. 761.

a14 p14 To r., 🏛 Π. B. Poindessault, Summer 1980, 55.

a15 p15 To r., Z. Naville 10, 1120.

a16 p16 To r., 🏛. ANS Inv. 1988.158.2.

a17 p17 ...VΣIVHV...ΔHMHTPI ΣΩTHPΩΣ. To r., M. Peus 313, 13 Aug. 1983, 212.

a17 p17 ↑ 2.68 New York, Hoover coll.

a18 p18 ↑ 4.02 BAΣIΛE...ΔHΛIH...THPΩ... To r., 🏛. AHNS 800.1.

a18 p18 ↑ 3.87 AHNS 800.2.

a18 p18 ↑ 3.42 AHNS 800.3.

a19 p19 ↑ 2.29 BAΣIΔEΩΣ...HT... To r., 🏛. AHNS 800.9.

a19 p20 ↑ 2.31 BAΣΛΣ...ΔHVT...ΣΩTO... To r., 🏛. AHNS 800.10.

a20 p20 2.22 Baldwin & Sons, 1987.

a19 p21 ↑ 2.09 I...HICVIO...I... To r., 🏛 ?. ANS Inv. 1968.23.1.

a19 p22 ↑ 2.24 Worn inscription. To r., Π. AHNS 800.107.

a21 p23 ↑ 1.74 ...AΣΛE...HM...ΩTHP... To r., EΞP(?) (165 S.E.= 148/7 B.C.E.). AHNS 800.13.

a22 p24 BAΣIΛEΩΣ ΔHИHTPIOY ΣΩTHPO... To r., Π. Naville, 10. 1119.

a23 p25 ↑ 3.26 ...VI..HNΛbI... To r., CI. AHNS 800.68.

a24 p26 ↑ 2.32 **ΒΑΣΛΣ...ΔΗVΤ...ΣΩΤΟ...** To r., Γ∏. AHNS 800.7
a24 p26 ↑ 2.89 AHNS 800.6.
a25 p26 ↑ 1.90 Worn control mark. *Obv.:* Head of young Herakles wearing lion skin. ANS 1988.158.1.
a24 p27 ↑ 2.52 **ΒΑΣΙΛΗΩΣ ΔΗΛΗΤΡΙΟ...ΣΟΤΗΡΟ...** To r., Γ∏. CSE 555.
a24 p27 ↑ 1.88 AHNS 800.8.
a26 p28 ↖ 3:23 **ΒΑΣΙΛΗΩ...ΔΗΜΗΤΡΙ...ƲΤΗΡΩ...** To r., Ⱥ. British Museum GH12.

Group C: Undated, No Control Marks

Obv.: Diademed head of Demetrius I r., border variable. Style ranges from good to barbarous.
Rev.: **ΒΑΣΙLΕΩΣ** on r., **ΔΗΜΗΤΡΙΟΥ ΣΩΤΗΡΟΣ** in two lines on l., cornucopia; no controls.

Æ Drachms

a26 p29 ↑ 4.04 **ΒΑΣΙΛΕΩ...ΔΗΜΗΤ...ΖΩΤΗVΟ...** AHNS 800.5.
a27 p29 ↑ 3.58 AHNS 800.4.
a28 p30 ↑ 2.73 **...ΑΣΙΛΕΩ...ΔΗΜΗΤΡΙΙ...ΣΩΤΗΙΟ...** J. Schulman FPL 203, Oct. 1972, 93.
a29 p31 ↖ 3.14 **ΒΑΣΙΛΕΩΣ...ΔΗΜΗΤΡΙ...ΖΩΤΗΡΥ**. AHNS 800.760.
a30 p32 ↑ 3.61 Inscription begins on l. **ΙΙ...ΛΙΣΑΙΙ...ΛΗΜΗ...ΙΙΙ...** AHNS 800.69.
a31 p33 ↑ 3.37 **ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙ...ΩΤΗΣΡ...** Italo Vecchi, Oct. 6, 1997, 425.

Series II: Uncertain King Nicator

Group A: Undated, Barbarous Style, No Control Marks, Inscription in Two Lines.

Obv.: Diademed head of ruler (Demetrius I?) r.; border variable.
Rev.: **ΒΑCΙΛΕΩC** on r., **ΝΙΚΑΤΟΡΟC** on l.; cornucopia; no controls.

Æ Drachms

a1 p1 ↖ 2.03 **...ΕΛΩC...VΙΚΑΤΟΡ...** AHNS 800.239.

a1	p1		Naville 10, 1121.
a1	p1	↑ 1.61	Silver washed copper core. New York, Hoover coll.
a1	p2	↑ 1.02	...ACIIЄ ...VIKV⅃C. AHNS 800.36.
a2	p3	↑ 0.97	...ΛΩΛ...NIKVIC... AHNS 800.342.
a3	p4	↗ 1.17	...CIΛЄΩ...ATOPOC. AHNS 800.98.
a4	p5	↑ 0.81	...ΛTΩIH...IΛ⅃ΠC... AHNS 800.31.
a4	p5	↑ 1.22	AHNS 800.32.
a4	p5	↖ 1.21	AHNS 800.33.
a4	p5	↖ 1.44	AHNS 800.38.
a5	p6	↑ 1.33	...ΛTIVI...K⅃U... AHNS 800.22.
a6	p7	↑ 1.35	..EV⅃II...NVIK... AHNS 800.44.

Group B: Undated, Barbarous Style, No Control Marks, Inscription in Three Lines.

Obv.: Diademed head of ruler (Demetrius I?) r.; border variable.
Rev.: BAΣIΛEΩΣ BAΣIΛEΩN (?) on r., NIKATOPOΣ on l.; cornucopia; no controls.

Æ Drachms

a1	p8	↑ 2.11	...AΣIΛE...NΣIΛEΩN NIKATOPOΣ. Silver washed copper core. AHNS 800.341.
a7	p9	↑ 1.45	...ΠVIC...VVOIICU...NIKIIΛH... AHNS 800.66.
a7	p9	↑ 1.67	AHNS 800.67.

Series III: In the Name of Uncertain King Seleucus

Group A: Undated, Barbarous Style, No Control Marks.

Obv.: Diademed head of ruler (Demetrios I?) r.; dotted border.
Rev.: BACIΛEΩC on r., CEΛEYKOY on l.; cornucopia; no controls.

Æ Drachms

a1	p1	↑ 1.60	BACIΛЄΩ...CЄΛЄYKOY. AHNS 800.15.
a1	p2	↑ 1.46	BA⅁EIΛ...⅁Λ⅁Y... AHNS 800.16.
a2	p3	↑ 0.82	...ACΛHO...CKVГ... AHNS 800.18.
a2	p3	↑ 0.93	AHNS 800.21.

a3	p4	↑	0.80	...CV...CЄΛЄΛK... AHNS 800.24.
a4	p5	↑	0.83	BACIΛ...CЄΛЄΛK... AHNS 800.29.
a5	p6	↑	0.91	...V...EVИΔΔ... AHNS 800.27.
a5	p6	↑	1.09	AHNS 800.28.
a6	p7	↑	1.18	...IΛICΛH...CЄIACK... AHNS 800.42.
a6	p8	↑	1.01	...ΣIΛ...CЄIAЄ... AHNS 800.102.
a6	p9	↑	0.87	...IΛЄK... AHNS 800.41.
a7	p10	↑	1.13	...ΛIKV⊥...EVKO... AHNS 800.35.
a7	p11	↑	1.02	...ΛΛIKI...IEVV... AHNS 800.74.

Group B: Undated, Abstract Style, No Control Marks.

Obv.: Diademed and radiate (?) head of ruler (Demetrius I?) r.; dotted border.

Rev.: BACIΛEΩC on r., CEΛEYKOY on l.; cornucopia; no controls.

Æ Drachms

a8	p12	↓	0.93	...CЄΛKO... AHNS 800.63.
a8	p13	↖	0.66	...HIO...OΠI... AHNS 800.64.
a8	p14	↓	0.91	...CЄΛKO... New York, Hoover coll.
a8	p15	↑	0.69	Worn inscription. AHNS 800.65.
a9	p16		0.50	Classical Cash 1, May 13, 1995, 181.
a10	p17		1.20	Classical Cash 1, May 13, 1995, 182.
a11	p18	↑	0.67	Worn inscription. AHNS 800.78.
a12	p19	↑	0.75	...O... AHNS 800.97.
a13	p20	↓	0.88	BΛH⊏O...Π... AHNS 800.133.

Group C: Undated, Barbarous Style, No Control Marks.

Obv.: Bare head of ruler (Demetrius I?) r. with earring and arc of dots behind; dotted border.

Rev.: BACIΛEΩC on r., CEΛEYKOY on l.; cornucopia; no controls.

Æ Drachms

a14	p21	↑	0.74	...AKΩΛVI...HΛЄ... AHNS 800.25.
a14	p21	↑	0.98	AHNS 800.26.

Series IV: In the names of Uncertain Individuals.

Group A: Undated Coins of Barbarous Style without Control Marks. Two Line Inscription.[47]

Obv.: Diademed head of ruler (Demetrius I?) r.; border variable.
Rev.: Various barbarous inscriptions; cornucopia; no controls.

Æ Drachms

a1 (Ia21) p1	↑	1.71	...NI...	AHNS 800.14.
a2 (IIIa2) p2	↑	1.02	...VH...ΛIHO...	AHNS 800.17.
a2 (IIIa2) p2	↑	1.13		AHNS 800.19.
a2 (IIIa2) p3	↖	1.26	...N...KΛI...ICHO...	AHNS 800.20.
a3 p4	↑	1.58	...ΛVV...EΩΛ...	AHNS 800.11.
a4 p4	↑	1.59		AHNS 800.12.
a5 p5	↖	0.87	...KΩIΛ...ИHΛ...	AHNS 800.30.
a6 p5	↓	1.18		AHNS 800.37.
a6 p6	↓	1.06	...IΛKII...ИCΛ...	AHNS 800.40.
a7 p7	↓	0.75	...WTIOIШ...ΓOΛHΠ.	AHNS800.45.
a7 p7	↓	0.62		AHNS 800.47.
a7 p7	↓	0.63		AHNS 800.112.
a8 p7	↑	0.69		AHNS 800.127.
a9 p7	↑	0.62		AHNS 800.49.
a10 p7	↓	0.79		AHNS 800.50.
a7 p8	↓	0.79	...ICHIO...TI ⊣ I⊢ N...	AHNS 800.54.
a11 p9	↓	0.36	...ШVIVШ...IП ⊣...	AHNS 800.46.
a11 p9	↓	0.55		AHNS 800.48.
a11 p9	↓	0.84		AHNS 800.51.
a11 p9	↓	0.62		AHNS 800.55.
a11 p9	↓	0.83		AHNS 800.56.
a11 p9	↓	0.66		AHNS 800.58.
a12 p9	↘	0.73		AHNS 800.59.
a11 p10	↓	0.74	...ΛШV...ИTΛП...	AHNS 800.52.

[47] Because of the extreme crudeness and variety of the inscriptions in series IV the coins have been grouped according to the number of lines in the inscriptions rather than having separate groups for each inscription.

a11 p10 ↓ 0.59 AHNS 800.53.
a11 p10 ↓ 0.68 AHNS 800.57.
a12 p11 ↑ 0.81 ...⊥Γ...TΠO... AHNS 800.96.
a12 p11 ↑ 0.66 AHNS 800.106.
a13 p12 ↓ 0.87 ...OVI I...ΛV... AHNS 800.61.
a13 p13 ↓ 0.77 ...VO ⊣VC...TIIIHЄ... AHNS 800.62.
a14 p14 ↓ 1.17 ...CVIC...AC... AHNS 800.23.
a15 p15 ↖ 1.13 ...HHVЄΛO...ΔVΠVH... AHNS 800.34.
a16 p16 ↑ 0.96 ...KTIO...Λ...ΛO... AHNS 800.39.
a17 p17 ↑ 0.69 ...ΛЄTΛ...V⊥⊥V... AHNS 800.43.
a18 p18 ↑ 0.96 ...⊥Γ...TΠO... AHNS 800.60.
a19 p19 ↑ 2.53 ...ΔVΠΛ...IVΠV... AHNS 800.71.
a20 p20 ↑ 1.09 ...ЄIHIV...VVΛV... AHNS 800.72.
a21 p21 ↑ 1.23 ...ΛTЄ...IИVV... AHNS 800.75.
a22 p22 ↓ 0.66 ...ΛTI...UV⊥... AHNS 800.76.
a23 p23 ↓ 0.69 ...ΛЄTЄ...V⊥V... AHNS 800.77.
a24 p24 ↓ 0.54 ...TΓO...T... AHNS 800.79.
a25 p25 ↑ 0.65 ...⊔IVO⊥⊥V...O... AHNS 800.80.
a26 p26 ↑ 0.69 ...UV...ΠΩ... AHNS 800.81.
a27 p27 ↖ 1.04 ...ΛTVT...VΛTC... AHNS 800.83.
a28 p28 ↖ 1.02 ...HΛΩΛT...HV⊥V... AHNS 800.84.
a29 p29 ↖ 0.82 ...Λ⊏Λ∈IΛ...V⊏K... AHNS 800.85.
a30 p30 ↑ 0.96 ...ΛIΩЄΛ...V⊥IV⊥... AHNS 800.86.
a31 p31 ↖ 0.60 ...U/V\... AHNS 800.87.
a32 p32 ↑ 0.78 ...ΔO⊔O...Π... ⊣TI... AHNS 800.88.
a33 p33 ↑ 0.97 ...[IV...CVCT... AHNS 800.89.
a34 p34 ↖ 1.00 ...K...ΛO... AHNS 800.90.
a35 p35 ↘ 0.61 ...Λ⊏CTЄ...V⊏VVIIIΛ... AHNS 800.91.
a36 p36 ↓ 0.86 ...V⊥⊥VIV... AHNS 800.92.
a37 p37 ↓ 0.67 ...ΛΛ...IΛ... AHNS 800.93.
a38 p38 ↖ 0.69 ...TЄ... AHNS 800.94.
a39 p39 ↑ 1.02 ...LV...VΠ... 800.95.
a40 p40 ↖ 0.85 VVVV...λΩ... AHNS 800.99.
a41 p41 ↓ 0.56 IƎIOΩ...HV... AHNS 800.103.
a42 p42 ↑ 1.13 ...I...Ǝ... AHNS 800.104.
a43 p43 ↑ 0.91 Worn inscription. AHNS 800.105.
a44 p44 ↖ 1.12 ...LΔЬΩ...YΘ... AHNS 800.109.

a45 p45 ↖ 0.74 ...ΛIΛ...ΛΘ... AHNS 800.110.
a46 p46 ↓ 0.68 ...VE... AHNS 800.111.
a47 p47 ↑ 0.71 Worn inscription. AHNS 800.128.
a48 p48 ↖ 1.50 ...ΛIIICσ...ИV... AHNS 800.113.
a49 p49 ↘ 0.54 ...IIII... AHNS 800.114.
a50 p50 ↓ 0.88 ...II...Λ... AHNS 800.118.
a51 p51 ↑ 0.48 ...ΛEΛOΠT...VCVO...⊥... AHNS 800.119.
a52 p52 ↑ 1.04 ...⊥⊥...VCI... AHNS 800.120.
a53 p53 ↖ 1.12 ...⊥⊥⊣....VΛHΛ... AHNS 800.121.
a54 p54 ↓ 0.95 Worn inscription. AHNS 800.122.
a55 p55 ↑ 0.82 ...EՈ...CΠVV... AHNS 800.123.
a56 p56 ↑ 0.96 ...VЄVb... AHNS 800.124.
a57 p57 ↑ 0.67 ...Λ...ΛT...VCWI... AHNS 800.125.
a58 p58 ↑ 1.41 ...VI⊥...ΛCIΔCΠՈ... AHNS 800.126.
a59 p59 ↑ 0.65 ...VΛI⊥⊥...⊣ΔЄVE... AHNS 800.132.

Group B: Undated, Barbarous Style, No Control Marks, Three or Four Line Inscription.

Obv.: Diademed head of ruler (Demetrius I?) r.; border variable.
Rev.: Various barbarous inscriptions; cornucopia; no controls.

Æ Drachms

a60 p60 ↑ 2.18 ...CNV...IIIIV...C... AHNS 800.70.
a61 p61 ↑ 2.05 ...KIΛ...A...CI... AHNS 800.73.
a62 p62 ↖ 0.99 ...VBAI...ZVT...IΛ⊥⊥I...ΠOIV... AHNS 800.82.
a63 p63 ↑ 1.32 ...OEI...ΣVLIV...VV[EVI...OCI... AHNS 800.108.

Group C: Undated, Barbarous Style, No Control Marks, Two Line Inscription.

Obv.: Diademed head of ruler (Demetrius I?) r.; border variable.
Rev.: Various barbarous inscriptions; cornucopia; no controls.

Æ Cores washed with silver

a64 p64 ↘ 0.79 Worn inscription. AHNS 800.115.
a65 p65 ↘ 0.92 Worn inscription. AHNS 800.116.
a66 p66 ↘ 0.63 ...OOT...ΛΛ⊥⊥)... AHNS 800.117.

Group D: Undated, Barbarous Style, No Control Marks.

Obv.: Diademed head of ruler (Demetrius I?) l.; border variable.
Rev.: Various barbarous inscriptions; cornucopia; no controls.

Æ Drachms

a67 p67 ↑ 0.66 *Obv.:* to l. ...ΙVΛΤ... *Rev.:* ...ΑΓΑ...ΛΙЄ... AHNS 800.100.
a68 p68 ↑ 0.76 ...ΤV...ΙΙVVΛΤ...ΙΛVΙΛV... AHNS 800.101.
a69 p69 ↑ 0.67 *Obv.:* to l. ...VΙVΙVΛ... *Rev.:* ...ΩΩ...⊣.... AHNS 800. 131.
a70 p59 ↑ 0.78 AHNS 800.130.
a71 p70 ↑ 1.22 ...ΙΙΙ⊣ L...ΙΙΛΙΛ... AHNS 800.129.

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THE LETTERS ΙΑΑΓ ON SOME COINS OF ABILA AND GADARA

GETZEL M. COHEN

The abbreviation Ι Α Α Γ is found on some coins of the second and third centuries A.D. of two cities of the Dekapolis, Abila and Gadara. It is generally, but not universally, agreed that the first three letters are abbreviations for ΙΕΡΑΣ, ΑΣΥΛΟΥ, and ΑΥΤΟΝΟΜΟΥ. The term designated by the Γ remains unclear.

The usual legend on the reverse of the coinage of Abila reads ΣΕ ΑΒΙΛΗΝΩΝ Ι Α Α Γ ΚΟΙ ΣΥ or variants thereof. That is, ΣΕ(ΛΕΥΚΕΩΝ) ΑΒΙΛΗΝΩΝ Ι(ΕΡΑΣ) Α(ΣΥΛΟΥ) Α(ΥΤΟΝΟΜΟΥ) Γ(.....) ΚΟΙ(ΛΗΣ) ΣΥ(ΡΙΑΣ). On coins of Gadara we find, for example, ΠΟΜ(ΠΗΙΕΩΝ) ΓΑΔΑΡ(ΕΩΝ) ΙΑΑΓ Κ(ΟΙΛΗΣ) ΣΥΡ(ΙΑΣ), (*SNGANSPalestine* 1309; see also Spijkerman, p. 148, no. 76). Finally, on coins of Capitolias, the legend ΚΑΠΙΤΩΛΙΕΩΝ ΙΑΑ—without the Γ—is also attested. It is interesting to note, incidentally, that Gadara, Abila, and Capitolias were located quite close to each other in the area southeast of the Sea of Galilee. Three hypotheses have been presented by various scholars in an attempt to explain the letter sequence ΙΑΑΓ and, specifically, the letter Γ.

(A.) Ya'akov Meshorer commented that "the letters Α.Γ. may perhaps indicate that the people of Abila considered Alexander the Great to be the founder of their city."[1] This is an interesting sugges-

[1] *City-Coins of Eretz-Israel and the Decapolis in the Roman Period* (Jerusalem, 1985), p. 78. I am grateful to Ya'akov Meshorer who kindly read an earlier draft of this paper.

tion. In a private communication Professor Meshorer explained further that his theory was based on the fact that Herakles is very conspicuous on the coins of Abila and Gadara. Furthermore, he noted the association between Alexander and Herakles. Earlier, Henri Seyrig had suggested that a portrait bust on the reverse of a coin of Abila might be that of Alexander.[2] In fact, a number of cities in Transjordan seem to have claimed Alexander as their founder. For instance, some coins of Capitolias from the reign of Commodus have on the reverse the legend ΚΑΠΙ(ΤΩΛΙΕΩΝ) ΑΛΕΞ(ΑΝΔΡΟΣ) ΜΑΚΕ(ΔΩΝ or ΔΟΝΩΝ) ΓΕΝΑΡ(ΧΗΣ) or variants thereof.[3] And a coin of the early third century A.D. from Gerasa bears the legend *Ἀλέξ(ανδρος) Μακ(εδὼν) κτί(στης) Γεράσων*.[4] Other coins minted under Elagabalus have a bust of Alexander on the obverse and the legend ΑΛΕΞΑΝΔΡΟΣ ΜΑΚΕΔΩΝ on the reverse.[5] Furthermore, at least two other cities of

[2] *Syria* 36 (1959), p. 67.

[3] See, for example, H. Seyrig, *Syria* 36 (1959) 76; Spijkerman, p. 102, no. 15; *SNGANSPalestine* 1274; W. Kellner, *Schweizer Münzblatter* 77 (1970), pp. 2–3.

[4] H. Seyrig, *Syria* 42 (1965), pp. 25–28.

[5] For coins with a bust of Alexander and the legend ΑΛΕΞΑΝΔΡΟΣ ΜΑΚΕΔΩΝ see, for example, Spijkerman, p. 166, nos. 34–35; see further W. Leschhorn, *Gründer der Stadt* (Stuttgart, 1984), pp. 218–21. In addition to the coinage, there is literary and numismatic evidence from late antiquity and the Byzantine period that associated the founding of Gerasa with Alexander the Great. According to a late tradition recorded in a a gloss of Iamblichus's commentary on the *Arithmetica* of Nicomachus (see L. Holsten *et al.* [eds.] in their edition of Stephanus, 3, 543), the toponym was derived from the fact that Alexander settled a group of veterans (*γέροντες*) at the site. According to the *Etymologicum Magnum* (s.v. "Gerasenos"), after Alexander took the city and killed the "young men," he discharged the "old men" who founded the settlement. Dismissing the fanciful etymology for the toponym, we are left with a (late) association of Alexander with the founding of a settlement at Gerasa. In addition, an inscription, dated paleographically to the second half of the second century A.D., mentions certain "Macedonians" (Welles in *Gerasa*, p. 410, no. 78). On the other hand, a pedestal that bore a statue of Perdikkas, Alexander's general, had a dedication that is dated palaeographically to the first half of the third century A.D. (Kraeling, in *Gerasa*, p. 423, no. 137). The claim of both Alexander and Perdiccas as founder is similar to the situation found at Samaria. According to Curtius Rufus (4.8.9) while Alexander the Great was in Egypt (332/1 B.C.) the Samaritans rebelled and assassinated Andromachus, the governor of Syria. According to Hieronymus (*Chron.* 123, ed. Helm^2) and the Armenian version of Eusebius (*Chron.* 197, ed. Karst), Alexander punished the rebellious

the Decapolis, Pella and Dion, apparently also claimed to have been founded by Alexander.[6] Thus, if Meshorer's suggested restoration is correct it would indicate that in the late second/early third century A.D. the inhabitants of Abila, like those at Capitolias, Gerasa, Pella, and Dion, claimed that Alexander the Great had founded their city. In this connection it is useful to recall the "Alexandrolatry" of this period that prompted a number of cities throughout the ancient Near East among them Thessalonica and a town in central Asia Minor at/near the modern Çorhisar (see below) to claim Alexander as their "founder."[7]

Nevertheless, there is a problem with Meshorer's suggested reading. On the extant coins of both Capitolias and Gerasa the king is specifically identified as "Alexander the Macedonian." At Çorhisar in the Sandıklı plain in central Turkey, an inscription, dated palaeographically to the Imperial period, has been found which reads *Ἀλέξανδρον Μακεδόνα κτιστὴν τῆς πολέως* and probably refers to the Macedonian king rather than a prominent citizen who claimed descent from the original Macedonian settlers.[8] On the other hand, in the case of the

Samaritans and after having captured the city settled Macedonians there. Syncellus (496, ed. Mosshammer) also mentions Alexander settling Macedonians in Samaria after he captured the city. However, in another passage (*Chron.* 199, ed. Kart) Eusebius says it was Perdiccas who had re-settled the city. There is, however, no inherent contradiction between the claims of both Alexander and Perdiccas as "founder" of either Gerasa or Samaria. After all, it is possible that Perdiccas founded one or both colonies on orders from the king.

[6] Stephanus (s.v. "Dion") mentions that Dion was a *πόλις...Κοίλης Συρίας, κτίσμα Ἀλεξάνδρου, καὶ Πέλλα*. The words *καὶ Πέλλα* are probably a gloss indicating that both Pella and Dion were founded by the Macedonian king.

[7] See G. M. Cohen, *The Hellenistic Settlements in Europe, the Islands and Asia Minor* (Berkeley, 1995), pp. 104 and 317.

[8] W. M. Ramsay, *Cities and Bishoprics of Phrygia* (Oxford, 1895–1897), p. 702, no. 638 = *Inscriptiones Graecae ad res Romanas Pertinentes* 4:692. For the reading *κτίστην* (Ramsay, *Journal of Hellenic Studies* 8 [1887], p. 478, and *Inscriptiones Graecae ad res Romanas Pertinentes* 4:692) rather than *οἰκιστήν* (Legrand and Chamonard, *Bulletin de Correspondance Hellenique* 17 [1893], p. 277, and Ramsay, *Cities and Bishoprics of Phrygia* 702) see Leschhorn, *Gründer* 221. Legrand and Chamonard (*Bulletin de Correspondance Hellenique* [1893], p. 278) suggested the stone might have been brought from Kara Sandıklı. See further, Cohen (above, n. 7), pp. 315–18.

Abila coinage Meshorer's suggested restoration would simply read Α(ΛΕΞΑΝΔΡΟΣ) Γ(ΕΝΑΡΧΗΣ), i.e. "Alexander the Genarches" rather than "Alexander the Macedonian the Genarches." However, the use of the name without the ethnic would not be unprecedented portrait. In the third century A.D. a coin of Sagalassus, for example, had a portrait of Alexander on horseback and the legend ΑΛΕΞΑΝΔΡΟΣ (*SNGvAulock* 5206) and coins of Apollonia in Phrygia had the king's name (*SNGvAulock* 4988, ΑΛΕΞ; 90, ΑΛΕΞΑΝΔΟΣ [*sic*]). In all these cases there is no additional ethnic.

At Abila, in addition to the inscription ΣΕ(ΛΕΥΚΕΩΝ) ΑΒΙΛΗΝΩΝ ΙΑΑΓ ΚΟΙ(ΛΗΣ) ΣΥ(ΡΙΑΣ) (Spijkerman, pp. 51ff., nos. 1, 3, 9–10 [161/2–166/7 A.D.] 12-14 [187/8–188/9 A.D.]) we also find in 218/9 A.D. ΙΕΑΣΥ = ΙΕ(ΡΑΣ) ΑΣΥ(ΛΟΥ) (Spijkerman, p. 55, nos. 23–24). I have not been able to find an example of ΑΥΤΟΝΟΜΟΥ in either full or abbreviated form on any extant coins of Abila. On the coins of Abila the letters appear with various reverse types such as Herakles on a rock, Tyche within an arch. On coins with the expanded abbreviations there is a hexastyle temple as the reverse type.

At Gadara the abbreviation ΙΑΑΓ (Spijkerman, pp. 137ff. nos. 31 [159/6 A.D.], 35-36 [161/2–162/3 A.D.], 46–47 [160–1 A.D.], 51–52 [161–62 A.D.], 76–77 [217–18 A.D.]) is occasionally expanded to ΙΕΑΣΑΓ = ΙΕ(ΡΑΣ) ΑΣ(ΥΛΟΥ) Α(ΥΤΟΝΟΜΟΥ) Γ (Spijkerman, p. 143, nos. 60–61, 178/9 A.D.). On a coin of 219 A.D. the inscription reads ΙΑΥ = Ι(ΕΡΑΣ) ΑΥ(ΤΟΝΟΜΟΥ) (Spijkerman, p. 151, no. 80, 218/9 A.D.). On the coins of Gadara the letters ΙΑΑΓ appear with a reverse type of a seated Zeus in a tetrastyle temple. On coins with the expanded abbreviations the reverse types include Zeus within a tetrastyle temple and Herakles.

At Capitolias we usually find ΚΑΠΙΤΩΛΙΕΩΝ ΙΑΑ (Spijkerman, pp. 99ff., nos. 3–9, 165/6–166/7 A.D.). Occasionally the abbreviation is expanded to ΑΣΥΑΥΤ = ΑΣΥ(ΛΟΥ) ΑΥΤ(ΟΝΟΜΟΥ) (Spijkerman, p. 99, nos. 1–2, 165/6–166/7 A.D.), ΙΕΡΑΣΑΥ = ΙΕΡ(ΑΣ) ΑΣ(ΥΛΟΥ) ΑΥ(ΤΟΝΟΜΟΥ) (Spijkerman, p. 105, nos. 16–19, 22–23, 204/5–218/9 A.D.) and ΙΕΡΑΣΥΑΥΤ = ΙΕΡ(ΑΣ) ΑΣΥ(ΛΟΥ) ΑΥΤ(ΟΝΟΜΟΥ) (Spijkerman, p. 101, no. 11, 189–90 A.D.). I have not found the letter Γ on any extant examples from Capitolias. On the coins of Capitolias the letters Ι Α Α appear with a reverse type of Tyche wearing a

turreted crown or of a hexastyle temple with Tyche within. The reverse types with the expanded abbreviation include a temple with Zeus or Tyche inside.

Based on the available evidence I would tentatively make the following observations. The abbreviations for the letters IAA are occasionally expanded, but the extant evidence provides no indication that the abbreviation for the letter Γ is expanded. On the coinage of Abila the available evidence for the letter Γ is limited to the second century A.D. and at Gadara it also found on coinage of the third century. Furthermore, in the case of Capitolias we only have examples of the letters I A A. There is no extant evidence for the letter Γ.

In summary, therefore, the evidence is negative and the argument proceeds from silence. However, in the absence of other evidence we may tentatively suggest that the word represented by the letter Γ stands apart from the words represented by IAA. If this working hypothesis is correct then we must reject Meshorer's interesting suggestion regarding the letters A and Γ. There are, however, two other hypotheses that have been suggested regarding the letter Γ.

(B.) M. J. Price, in a note to *SNGFitz* 5977 (a coin of Abila), has suggested IAAΓ should be interpreted as ΙΕΡΑΣ ΑΣΥΛΟΥ ΑΥΤΟΝΟΜΟΥ ΓΑΒΕΙΝΙΑΣ. He noted that the title, ΓΑΒΕΙΝΙΑΣ, was known from coins of Canatha (which was also a member of the Decapolis) (e.g., Spijkerman, pp. 92ff., nos. 6–10, 13–14, late second/early third century A.D.). In addition we may note that some coins of another member of the Decapolis, Nysa/Scythopolis, from ca. 59–56 B.C. have the legend ΓΑΒΙΝΙΣ ΟΙ ΕΝ ΝΥΣΗ and variants (see, for example, *RPC* 4825–26, also 4827–28). In other words, Nysa was apparently renamed Gabinias for a short time. In fact, according to Josephus (*AJ* 14.88, *BJ* 1.166), Gabinius restored many towns in Palestine, among them Samaria, Azotus, Scythopolis, Anthedon, Raphia, Adora, Marisa, Gaza, Apollonia, Jamnia, Gamala, and Adoreus. The fact that neither Abila nor Gadara, the two cities thus far known to have IAAΓ on their coinage, are not mentioned in Josphus's list is not necessarily significant. Josephus specifically says that in addition to the cities mentioned, Gabinius restored many others as well. Furthermore, Nysa (Scythopolis) is mentioned by Josephus and it apparently was renamed. To date, however, Canatha and Nysa/Scythopolis are the

only cities whose extant coins indicate they bore the name of the Roman general. This certainly raises the possibility that Abila could have been renamed for Gabinius. Nevertheless, there are problems with the suggested reading of ΓΑΒΕΙΝΙΑΣ for the Γ on the coins of Abila and Gadara. On the Abila coinage the first part of the legend bears the ethnic ΣΕ(ΛΕΥΚΕΩΝ) ΑΒΙΛΗΝΩΝ, the end has the toponymic ΚΟΙ(ΛΗΣ) ΣΥ(ΡΙΑΣ). On the coinage of Gadara the first part of the legend is ΓΑΔΑΡΕΩΝ ΙΑΑΓ Κ(ΟΛΙΛΗΣ) ΣΥ(ΡΙΑΣ) or ΠΟΜ(ΠΗΙΕΩΝ) ΓΑΔΑΡ(ΕΩΝ) followed by ΙΑΑΓ Κ(ΟΙΛΗΣ) ΣΥ(ΡΙΑΣ), cf. Dion whose coinage bears the simple legend ΔΕΙΗΝΩΝ ΚΟΙ(ΛΗΣ) ΣΥ(ΡΙΑΣ). Thus, according to Price's suggestion, on the coinage of Abila and Gadara the ethnic "of the Seleukeian Abilans" or "of the Pompeian Gadarenes" and the toponymic "of Koile Syria" bracketed various terms that specified (a) the status of the city along with (b) the additional ethnic (or toponym). This produces a situation in which the old ethnic of the city is followed by letters alluding to its status, followed by a letter referring to its new name, followed by the abbreviation for Koile Syria. I do think this likely. Furthermore, in the case of both Abila and Gadara the Γ appears on coins that already have double ethnics. If we follow Price's suggestion, coins of Abila and Gadara with the letter Γ would thus have had three names on them: Seleuceia and Abila, Pompeia and Gadara, and Gabinia. This is most unlikely. It is interesting to note, incidentally, that on the extant coins of Nysa/Scythopolis the legend ΓΑΒΙΝΙΣ ΟΙ ΕΝ ΝΥΣΗΙ, ΓΑ ΝΥΣ is not found in combination with the ethnic or the toponym ΝΥΣΑ ΚΑΙ ΣΚΥΘΟΠΟΛΙΣ, ΝΥΣΑΙΕΩΝ ΤΩΝ ΚΑΙ ΣΚΥΘΟΠΟΛΙΤΩΝ. In other words they lack either one or the other. Obviously this objection is from silence.

(C.) It has frequently been claimed (for example, by Kellner and Herzfelder) that on the coins of Abila and Gadara the Γ stood for ΓΝΩΡΙΜΟΥ.[9] In this they were following the earlier suggestion of Belly who was cited by Eckhel and who noted that other cities were called ΕΝΔΟΞΟΣ or ΛΑΜΠΡΟΤΑΤΟΣ.[10] De Saulcy also referred to

[9] See, for example, W. Kellner, *Schweizer Münzblatter* 77 (1970), pp. 1–2, nos. 1–3; H. Herzfelder, *RN* 39 (1936), p. 292.

[10] J. Eckhel, *Doctrina Numorum Veterum* (Vienna [?], 1792–1828), 3, 346.

this suggested reading, albeit with scepticism.[11] The combination ΙΕΡΑΣ ΚΑΙ ΑΣΥΛΟΥ ΚΑΙ ΑΥΤΟΝΟΜΟΥ or ΙΕΡΑΣ ΚΑΙ ΑΥΤΟΝΟΜΟΥ is, of course, often found on coins; see, for example, *SNGvAulock* 5731–32, 5734, 5736, 6538–43, and 8701. And ΙΕΡΑΣ ΑΣΥΛΟΥ ΑΥΤΟΝΟΜΟΥ with, for example, the additional ΕΛΕΥΘΕΡΑΣ or ΝΑΥΑΡΧΙΔΟΣ is also attested on coinage, see *SNGvAulock* 6097, 98. Nevertheless, I have not been able to find other examples of the use of ΓΝΩΡΙΜΟΣ written in full or abbreviated (rather than the appearance of just the letter gamma) on coins to describe a city. On the other hand, we do find the legend ΙΕΡΑΣ ΚΑΙ ΕΝΔΟΞΟΥ on coinage of Damascus from the early third century A.D. (De Saulcy, *Numismatique* 42, nos. 2–3). In the early to mid third century A.D. coins were minted at Perge in Pamphylia with the legend ΙΕΡΑ ΛΑΜΠΡΑ ΕΝΔΟΞΟΣ ΝΕΩΚΟΡΟΣ ΠΕΡΓΕ ΠΡΩΤΗ or variations thereof (e.g., "Waddington" 3409; W. Wroth, *Numismatic Chronicle* [1899], p. 105, n. 30; Imhoof-Blumer, *Kleinasiatische Münzen* [Vienna, 1901–2], p. 332, nos. 32 and 34; *SNGvAulock* 4729; *SNGFrance* 610).[12] The evidence is not conclusive and the results must be considered quite tentative, but the fact that ΕΝΔΟΞΟΣ and ΛΑΜΠΡΑ are found in combination with ΙΕΡΑ on civic coins of the Imperial period suggests that (as Belly speculated many years ago) ΓΝΩΡΙΜΟΣ is a possible restoration on the coins of Abila and Gadara. In the present state of the evidence this seems to be a reasonable explanation.

BMCLycaonia	G. F. Hill, *Catalogue of Greek Coins in the British Museum Lycaonia, Isauria and Cilicia* (London, 1900).
Gerasa	*C. H. Kraeling, Gerasa City of the Decapolis* (New Haven, 1938).

[11] F. de Saulcy, *Numismatique de la terre sainte* (Paris, 1874), pp. 309–10; cf. K. J. Rigsby (*Asylia* [Berkeley, 1996], p. 533 and n. 8) who concluded that the meaning of the Γ "remains uncertain."

[12] For the occurrence of ΕΝΔΟΞΟΣ on the coins of other Cilician cities in the third century A.D. see, for example, Syedra (e.g. *BMCLycaonia*, pp. 160–61, nos. 16 and 23) and Anazarbos (e.g., *BMCLycaonia*, pp. 34ff., nos. 16, 26, 30–32, and 35; *SNGvAulock* 5487–94, 5498, 5500, 5503, 5505, 5013); for ΕΝΔΟΞΟΣ in an inscription from Anazarbos of the early third century A.D. see M. Gough, *Anatolian Studies* 2 (1952), pp. 137–38, no. 16.

RPC	A. Burnett et al., *Roman Provincial Coinage* (London and Paris, 1991).
SNGANSPalestine	*Sylloge Nummorum Graecorum American Numismatic Society, 6; Palestine-South Arabia* (New York, 1981).
SNGFitz	[Great Britain] *Fitzwilliam Museum, Cambridge: Leake and General Collections* (London, 1940).
SNGFrance	*France 3: Cabinet de Médailles Pamphylie, Pisidie, Lycaonie, Galatie* (Zurich, 1994).
SNGvAulock	Germany, *Sammlung von Auclock* (Berlin, 1957-1981).
Spijkerman	A. Spijkerman, *The Coins of the Decapolis and Provincia Arabia* (Jerusalem, 1978).
"Waddington"	E. Babelon, "Inventaire de la collection Waddington," *Revue Numismatique* 1897–98.

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A NEW VARIETY OF A ROMAN PROVINCIAL TETRADRACHM FROM NEAPOLIS

JAY M. GALST

The most prominent device depicted on the provincial coins of Neapolis in Samaria is the scene of Mount Gerizim surmounted by a temple and an altar. This design is on many of the bronze coins struck in Neapolis from the reign of Antoninus Pius, 138-61, through Trebonianus Gallus and Volusian, 251-53. In Newell 1938 (37-47) Newell assigned the silver provincial tetradrachms of Caracalla, 215-17, depicting Mt. Gerizim, Fig. 1, to the mint at Neapolis. Through obverse portrait die links he associated the lit altar mint mark on the spread eagle reverse tetradrachms to the same mint. In his 1940 publication (93-94), Bellinger agreed with Newell's attribution and the lit altar mint mark was again assigned to Neapolis.

Fig. 1

Fig. 2

Fig. 3

Recently a new reverse style tetradrachm was found within a Spink auction lot of 55 assorted circulated Roman provincial tetradrachms, Fig. 2. The obverse is inscribed [AVTKAIAN]TW NЄINOCCЄ and depicts the bust of Caracalla right, laureate, cuirassed, seen from the rear. It appears to have the same obverse die as Bellinger 342, Fig. 3, which is a Neapolis spread eagle reverse style tetradrachm with the lit altar mint mark. The reverse is inscribed ΔHMAPXЄ [ ] ΠATOCTΔ and depicts Mt. Gerizim surmounted by a temple and an altar, at its base a colonnade, all in a double circle supported by an eagle with its head left. Between the eagle's legs there is a lighted altar. Thus, this new reverse type directly links the Mt. Gerizim scene and the lighted altar mint mark to Neapolis. It confirms the hypothesis shared by Newell and Bellinger.

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A HOARD OF EARLY BYZANTINE GLASS WEIGHTS FROM SARDIS

Mary Margaret Fulghum and Florent Heintz

ARCHAEOLOGICAL CONTEXT

The 1996 field season at Sardis yielded a hoard of 21 stamped glass discs,[1] usually described in scholarly literature as glass weights.[2] It is the first time that a sizable group of these artifacts, which are often recovered separately or in sets of two or three, was excavated in a precisely dated Byzantine archaeological context. The objects were found in a western suburb of the Late Antique city, in a split-level residential complex partially built on the Lydian fortification wall

[1] Six of these (catalogued as GW1, 5, 9, 14, 18 and 21 in this article) are stored in the depot of the Sardis compound while the remaining fifteen (catalogued as GW2, 3, 4, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 19, 20) are stored at the Manisa Museum, the official Turkish depository for Sardis artifacts. Drawings of glass weights are by Cathy Alexander for the Sardis Expedition.

[2] The fundamental articles on the subject of Byzantine glass weights (mostly catalogues) include: Schlumberger (1895), Mordtmann (1898), Grégoire (1907), De Markoff (1910), Petrie (1918), Monneret de Villard (1922), Jungfleisch (1932), Balog (1958), Ross (1962), Forien de Rochesnard (1972–73), Bendall (1996). We also had access to unpublished catalogues of glass weights from the American Numismatic Society and the Menil Foundation, thanks to the curatorial staff at both these institutions. A more argumentative approach to interpreting names of officials on glass weight was undertaken by Feissel (1986).

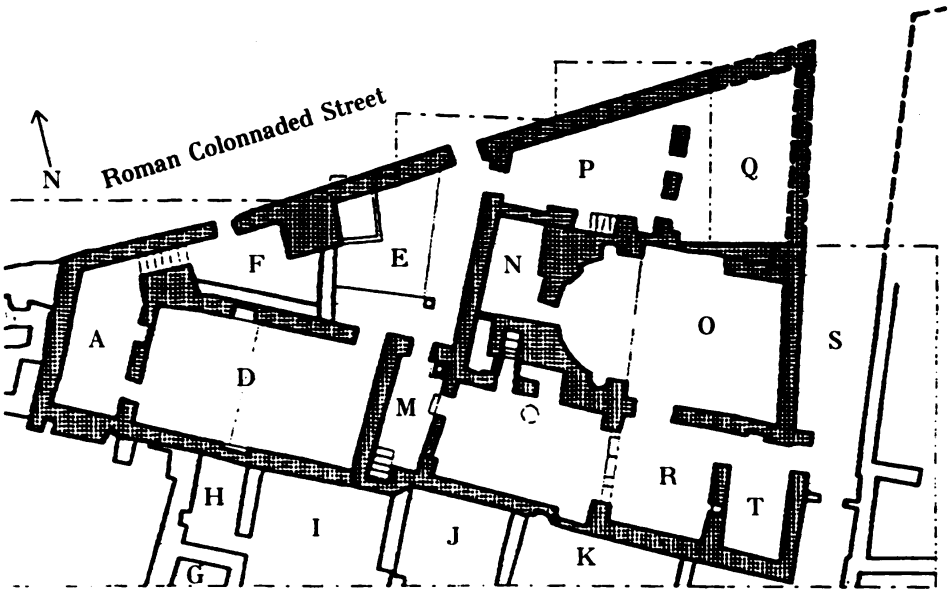


Fig. 1. Plan of Late Roman Residential Unit, Sardis Sector MMS/S

(Fig. 1).[3] In its last phase, the room from which the objects were excavated [Room N] was accessible only from the western end of a large apsidal hall [Room O] through a narrow doorway. A marble threshold block preserves the cutting for a double wooden door.

The unpretentious Room N (roughly 4.5 x 3 m) had an earthen floor, which was well preserved to the south where the glass weights were found.[4] The group of glass weights was located against the west wall of Room N, close to a blocked doorway which originally led into a narrow corridor. Among the artifacts directly associated with the glass weights were miscellaneous unrelated pottery sherds, iron nails of various sizes, and two locks—one iron lock with its locking

[3] A similar house in the same sector was published by Greenewalt and Rautmann (1998) pp. 481–87. It closely resembles contemporary domestic structures from Apamea in Syria, with their mixture of grand public spaces and unassuming service corridors and rooms. Also see *Apamée de Syrie* (1984).

[4] To the north the floor was disturbed due to damage caused by a lime pit. It seems that after the house was abandoned many marble slabs from the walls and floors were removed and burned for the production of lime mortar.

mechanism preserved and one smaller bronze lock plate.[5] The evidence suggests that the glass weights might have been kept in a locked box which subsequently disintegrated, leaving only the remaining iron pieces. A bronze spatula was found roughly one meter away from the west wall,[6] and preserved on the spatula near the neck was a minuscule piece of gold leaf. Other artifacts recovered in the room but not directly associated with the glass weights include a stone pestle, a pair of iron tweezers, several string-cut bowls with a ribbed wall, and part of an African Red Slip plate Hayes form 109.[7] This type of plate is frequently found together with Hayes form 105 of which two examples were excavated from Rooms D and L.

According to Hayes, the date range for ARS 109 plates is ca. 580/600 – mid seventh century A.D.[8] Two bronze coins of Heraclius were found on the same dirt floor within a 1.5 m radius around the glass weights. They date respectively to 615–624 and 614/615.[9] Based on coin evidence, the city seems to have been virtually abandoned around the year 616 due to the imminent threat of a Persian invasion.[10] The early seventh century generally marks a drastic decline in the Byzantine material culture of Sardis.

DESCRIPTION

The weights are made of greenish blue glass which in many cases is obscured by an opaque white surface layer. This layer as well as the iridescent surface on several of the weights are the result of varying stages of glass deterioration and delamination.[11] All the weights bear

[5] Bronze lock: M96.007:10477; iron lock: M96.010:10493.

[6] M96.041:10552.

[7] ARS plate Hayes form 109: P96.140:10542.

[8] Hayes (1972), p. 172.

[9] These two coins were respectively numbered as 1996.169 and 1996.180; the former was catalogued as C96.10; see G. Bates (1971), nos. 945 and 900–902.

[10] Foss (1976), pp. 53ff.

[11] For a general discussion of glass decomposition, see Newton-Davidson (1989). Also see R. Brill (1961), pp. 18–22.

a circular stamp containing a cruciform monogram, and all are irregular around their edges (Fig. 2). Only obvious and significant breaks are noted in the catalogue.

GW1, G96.001:10443 = IN96.005; 2.40 cm; 4.15 g.
GW2, G96.002:10444 = IN96.006; 2.55 cm; 4.15 g. Glass stained with rust as a result of burial beside iron nail.
GW3, G96.003:10445 = IN96.007; 1.80 cm; 1.41 g.
GW4, G96.004:10446 = IN96.008; 2.55 cm; 3.91 g. Broken near scar.
GW5, G96.005:10447 = IN96.009; 2.15 cm; 2.03 g.
GW6, G96.006:10448 = IN96.010; 2.59 cm; 4.25 g.
GW7, G96.007:10449 = IN96.011; 2.69 cm; 4.13 g.
GW8, G96.008:10450 = IN96.012; 2.65 cm; 4.19 g.
GW9, G96.009:10451 = IN96.013; 2.47 cm; 4.34 g.
GW10, G96.010:10452 = IN96.014; 2.53 cm; 4.29 g.
GW11, G96.011:10453 = IN96.015; 2.5 cm; 2.06 g.
GW12, G96.012:10454 = IN96.016; 2.0 cm; 2.12 g.
GW13, G96.013:10455 = IN96.017; 2.5 cm; 4.20 g.
GW14, G96.014:10456 = IN96.018; 2.0 cm; 1.40 g.
GW15, G96.015:10457 = IN96.019; 2.5 cm; 4.22 g.
GW16, G96.016:10458 = IN96.020; 2.0 cm; 4.26 g.
GW17, G96.017:10459 = IN96.021; 2.6 cm; 4.28 g.
GW18, G96.018:10460 = IN96.022; 2.59 cm; 1.41 g.
GW19, G96.019:10461 = IN96.023; 2.6 cm; 4.23 g.
GW20, G96.020:10462 = IN96.024; 2.7 cm; 3.85 g. Rust stains and broken below monogram.
GW21, G96.021:10463 = IN96.025; 2.0 cm; 2.11 g.

The 21 weights fall into three size and weight brackets. The 14 largest; which represent the majority, weigh between 3.81 g and 4.33 g and range in diameter from 2.47 cm to 2.70 cm. Two of these weights are clearly broken, weighing 3.81 and 3.85 respectively and, discarding these, the next heaviest weight is 4.13 g. The second group, composed of four weights, ranges from 2.03 g to 2.16 g with diameters between 2.0 cm and 2.5 cm. Finally, the third group ranges between 1.40 and 1.42 g with diameters from 1.8 to 2.01 cm.

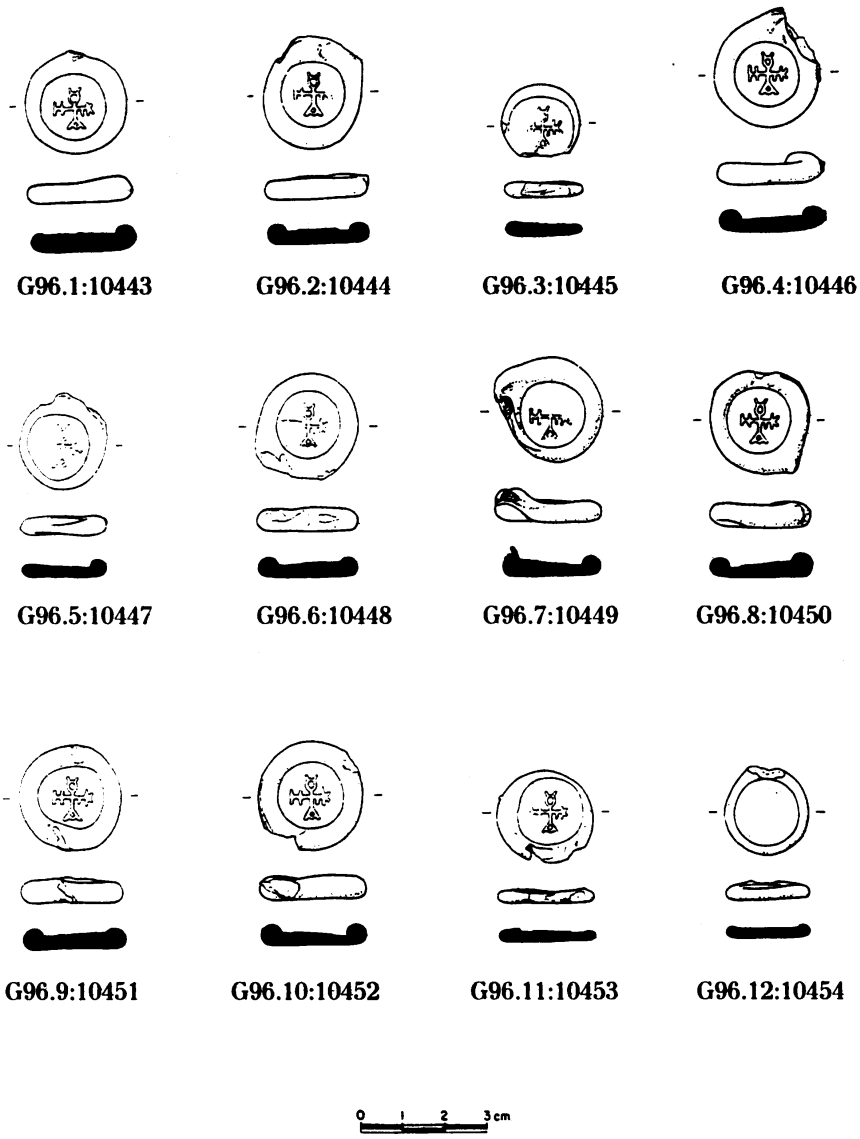
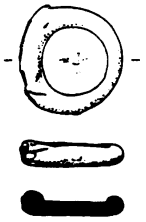


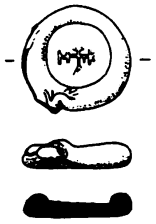
Fig. 2

G96.13:10455

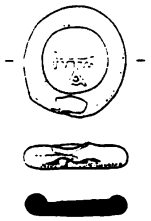
G96.14:10456



G96.15:10457

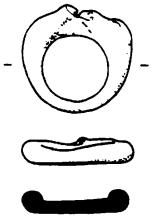


G96.16:10458

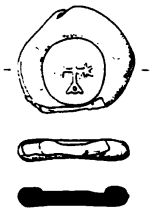


G96.17:10459

G96.18:10460

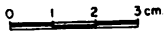


G96.19:10461



G96.20:10462

G96.21:10463



Most of the weights seem to bear the same cruciform monogram: an eta on the left arm of the cross, and alpha on the lower arm, a kappa on the right arm and a combined omicron/upsilon on the upper arm. On the right arm to the left of the kappa is a short pendant bar. On two of the weights bearing a fully legible monogram, the eta looks more like a mu.

INTERPRETATION

As previously mentioned, glass discs such as the one found at Sardis are commonly referred to as glass weights.[12] Glass weights may bear one of three main types of stamps: block monogram, cruciform monogram, and consular bust with surrounding legend. These series themselves may be broken down into several sub-categories and variations, which may include the addition of the bust of the emperor (crowned) and/or Christ or alterations in the legend. A developed typology demonstrates that the block monogram precedes the cruciform and the consular bust types.[13] The monograms on the vast majority of glass weights are those of magistrates, most probably of eparchs of Constantinople and possibly eparchs of the provinces.[14] While it is problematic to assign specific dates to most of the glass weights due to prosopographic ambiguities, the cruciform monogram series may be dated to the reign of Justinian at the earliest.[15]

In the secondary literature glass weights have often been interpreted as coin weights for the solidus and its fractions (semissis and tremissis).[16] In general, it may be observed that some type of corres-

[12] See n. 2.

[13] Iconographic and typological issues are discussed in an unpublished paper written by M. M. Fulghum for the 1997 American Numismatic Society Graduate Seminar (available from the ANS or from the author upon request).

[14] General treatment by Bendall (1996), who asserts that the monograms must be those of eparchs outside of Constantinople as well as those of eparchs from Constantinople; for a more in-depth prosopographical treatment, see Feissel (1986).

[15] The first cruciform monogram appears after the mid 530s [Dodd (1961) Table III].

[16] Schlumberger [(1895) 59] was the first to compare them to their Arab counterparts, which are clearly labeled as coin weights.

pondence exists between glass weights and gold coins. However, it has never been conclusively demonstrated that the glass weights served specifically for the purpose of weighing coins. This hypothesis has been undermined by a handful of the most recently published examples which do not seem to match any particular coin denonimantion.[17]

Arab glass weights provide decisive evidence for the interpretation of their Byzantine counterparts. Their function as weights is explicitly stated by their inscriptions. A subgroup within the Arab glass weights is inscribed with three denominations for Arab gold coins, dinar, half-dinar, and third-of-a-dinar. This coupled with the fact that the weight of the glass pieces matches that of the actual coins has allowed scholars to categorize this group of Arab glass weights as coin weights.[18] Paul Balog has shown that the first Arab glass weights from the early eighth century directly imitated their Byzantine predecessors.[19] Therefore, it is not unreasonable to assume that Byzantine glass weights were also serving as coin weights.

The question remains as to how the glass weights were used in daily life. One has to look no farther than across the Izmir-Ankara highway to one of the Byzantine shops excavated in 1962. In the deposit associated with the collapsed second floor of shop E14, three glass weights were found, one of each weight bracket.[20] Although worn, the largest weight (4.34 g) seems to bear the same monogram as most of those in the 1996 hoard. The medium-sized weight (2.02 g) bears a cruciform

[17] Ross (1962) 83–85 (see no. 99 in particular); Bass (1982) 211–12 (W9). It should be emphasized that this last example (from the Yassi Ada shipwreck) is atypical of the larger corpus of glass weights because it is perforated near the edge.

[18] See Miles (1948): according to Arab primary sources, Abd'al Malik (684–708) was responsible for a major monetary reform and issued glass weights for the purpose of testing coins. One source specifies that glass was chosen because it was "not susceptible to alteration, either by augmentation or by diminution." Miles noted that "the glass weight enabled the merchant or money-changer to establish with remarkable accuracy whether a coin was up to standard." Focusing on weights specifically from Egypt, Balog (1958) was able to identify transitional weights which bridged the gap between the last Byzantine weights in Egypt (641) and the first Arab reformed glass weights. For a recent treatment of Arabic glass weights see Morton (1993).

[19] See Balog (1958).

[20] The shop is published in *BASOR* 170 (1962), p. 49; Crawford (1990), pp. 86–90.

monogram containing a nu, alpha, epsilon and rho, which was read by Axel von Saldern as "Andrea." The smallest weight (1.36 g) was illegible. Also found in this deposit were a half nomisma weight in bronze (2.2 g) inscribed IB (iota beta = 12 siliquae = 1/2 nomisma) and the beam of small bronze balance approximately 13 cm long. The pans were not recovered.[21]

This combination of weights and balance may have originally belonged to a type of weighing kit such as an Egyptian wooden box from the University College collection in London.[22] The box contains one bronze nomisma weight and three glass weights reportedly of 2.3 g, 1.56 g, and 0.2 g respectively, the last being the weight of one siliqua. The beam of the balance included in this kit is the same length of that found in the Sardis Byzantine shop. Bruno Kisch, a historian of metrology, believes that the Egyptian balance was a money scale.[23]

The overwhelming majority of glass weights come with no archaeological context or at most a vague provenance. Furthermore, when glass weights are excavated from a secure context, they are found individually rather than in groups.[24] For these reasons, the set of three glass weights excavated from the Byzantine shop at Sardis in 1962 is particulary significant: not only was their discovery duly recorded but their context also helped in interpreting their function in daily life.

Unlike the hypothetical "weighing set" from Sardis shop E14, the 1996 hoard of glass weights was not found in a commercial space and contained many more weights than needed for a set. Room N, in which the 1996 hoard was found, is not accessible from any of the residential spaces around it (Rooms L, P and E), but only from the apse of Room O. The security afforded Room N, when coupled with the

[21] Crawford (1990), pp. 88–89; von Saldern (1980), p. 90, no. 668.

[22] Petrie (1926), p. 26, 42.

[23] Kisch (1965), p. 70 and fig. 32. This type of balance is among the smallest known in the late antique period. They are represented being held by a hand on the reverse of nomisma weights from the time of Julian, which are inscribed *exagium solidi*. On some Theodosian weights Juno Moneta holds a similar balance [Bendall (1996), pp. 17–19, nos. 1–5, 7–12].

[24] For example: Anemurium [AN 76.115; unpublished: for a similar weight, see Dalton (1901), p. 133, no. 664]; Yassi Ada [Bass (1982), pp. 211–12]; Sardis (e.g. G94.3:10162, unpublished).

evidence of the two locks found on the floor, suggests restricted access to this room.[25] Based on finds from 1997, the adjoining Room O may have been functioning as a chapel or small church at some point in its history.[26] In short, the glass weights were safely kept in what may have been part of an ecclesiastical space. Such archaeological circumstances would seem to illustrate one of the stipulations listed in a Novella of the Justinianic code dated to 545. This law, addressed to the praetorian prefect of the east, is aimed at protecting tax payers against unscrupulous tax collectors using weights and measures heavier than standard. Tax-payers are granted permission to receive "the measures and weights of commodities from the Most Glorious prefects, and the weights of gold, silver and other metals from the Most Glorious *Comes Sacrarum Largitionum* of the time. And these measures and weights are to be preserved in the most holy church of each city...."[27]

Assuming that glass weights fall under the heading of "weights of gold, silver, and other metals," the law raises the question of how glass weights were distributed to each city.[28] The Sardis hoard may help in answering part of this question. While the evidence does not exist to elucidate the administrative situation at the time, certain observations may be made about the physical manufacture of the weights.[29] Compared to glass weights preserved in museums and

[25] On the importance of locks, seals, and weights as security devices in the early Byzantine period see Vikan and Nesbitt (1980).

[26] During the 1997 field season a fragment of wall painting with the words ΑΓΙΟΣ Ο ΘΕΟΣ was found in Room O, as well as a cross engraved on the central stone in a row of step riser defining the raised floor of the apse. Other finds include a bonze hanger, possibly for a lamp.

[27] *Corpus Iuris Civilis (Codex Justinianus)* 128.15; trans. Hendy (1985), p. 332. On the *Comes Sacrarum Largitionum* see Delmaire (1989) and on the Eparch (of the City) see Guilland (1980).

[28] No known late antique sources specifically mention glass weights.

[29] A study of the manufacturing process used to produce Islamic glass weights was undertaken by conservator Fred Matson (1948). Matson believed that liquid glass, or glass paste, was poured in a pre-set amount from a ladle on to a cold iron surface. As the glass pieces were cooling, they were stamped. After they had finished hardening, the new glass weight was scraped off the iron surface, often leaving iron flakes attached to the bottom of the glass, and these are still visible today. We may apply this scenario of manufacture to the earlier Byzantine glass weights as well, although some cases exist which imply that the process used in the

private collections, the Sardis glass weights appear to be of inferior quality. Most extant glass weights are of uniform appearance, having a well centered stamp, a near perfect circular shape, and smooth, rounded edges. The 1996 Sardis weights, on the other hand, have irregular shapes, ill-centered stamps, and bumpy edges, and each weight bears a scar as the result of the glass being poured on a flat surface and then cut as it was cooling. Although the chemical composition of this glass has not been determined, its color and texture appear to be similar to those of locally made early Byzantine glass from Sardis.[30]

The monogram most similar to that of the Sardis hoard is that of the emperor Heraclius (610–41). Imperial monograms do occur, although infrequently, on glass weights.[31] The imperial monogram on Heraclian bronze coinage is very close to the Sardis monogram, mainly differing in the absence of a pendant bar and the clear presence of a rho (Fig. 3a). This latter difference is negligible, for as Grierson points out, the rho may become conflated with the omicron/upsilon and shift to the center of the upper arm of the cross.[32] This type of conflation also appears in Heraclius monograms found on silver vessel stamps (Fig. 3b).[33] However, on monograms known to be those of the emperor Heraclius, both on coins and silver vessels, the pendant bar never occurs. This feature precludes any definitive identification of the monogram on the Sardis glass weights with that of the emperor Heraclius. Based on comparanda from lead seals, the pendant bar might be a pi or possibly a gamma.[34] As a result, there is no obvious interpretation of the Sardis monogram.

Byzantine period did not produce uniform glass weights. Such cases are not to be found in museum cabinets, typically composed of extant glass weights in the best possible condition, but coming out of the ground at archaeological excavations. Some glass weights from the site of Sardis seem to have been measured out by attempting to control the amount of glass paste which was poured from a large ladle rather than emptying a small ladle containing a pre-set amount of liquid glass.

[30] On the fabric of Sardis glass, see von Saldern (1962), p. 9.

[31] Anastasius (possibly); Justinian, Justin II (respectively Forien de Rochesnard [1973] 32, series D), and possibly Maurice Tiberius (Buckton [1994] 89, no. 88).

[32] Grierson (1968), p. 55, table 8.

[33] Dodd (1961), tables 1 and 2.

[34] For lead seals, see Zacos-Veglery (1972), vol. 1, pl. 239, no. 353, deciphered as "Nonnou Episkopou."

Monograms of the emperor Heraclius (610–641)

Fig. 3a. On coinage

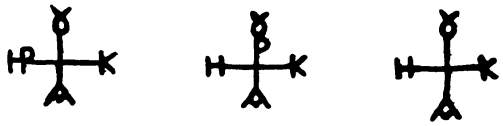


Fig. 3b. On silver vessels

CONCLUSION

Our understanding of the Sardis hoard depends on the interpretation of three separate factors: the archaeological context, the manufacture of the glass weights, and the reading of the monogram. If Room O served a liturgical purpose in the early seventh century, then the hoard may have been kept in the "sacristy" in compliance with the Justinianic decree of 545. Sets of three weights, one for each gold coin denomination, would then be distributed on demand to individual shop-keepers and tax-payers. If the blue-green fabric of the glass weights is the same as that of most glass artifacts from early Byzantine Sardis, then this, coupled with the comparatively imprecise manufacture of the Sardis weights, suggests that they were locally made. Finally, if the monogram which appears on the majority of the glass weights is compared with monograms on other contemporary artifacts, such as bronze coins and silver vessels, then it most closely resembles the various monograms used by the emperor Heraclius. While each of these observations is contingent on the interpretation of related artifacts, the Sardis hoard of glass weights represents a unique and significant find not only for the archaeological record, but also for those working in numismatics, prosopography, or the administrative, economic, and legislative history of the early Byzantine Empire.

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THREE NOTES ON GUPTA COIN LEGENDS

GERALD M. BROWNE

I

One of the varieties of the standard-type dīnāras of Chandragupta II displays on its reverse a male and a female enthroned and facing each other.[1] Only three examples of this variety are known, and their obverse legends are transcribed in their publications as follows:[2]

1. *rathimatho 'tirathapravaraḥ kṣitau*;
2. *prarathamathā [dhiruhya] kṣitim abhipātā divaṁ* [*jayati*]; and
3. *para-O-ma-O-bhago-O Śrī-Chandragupta<ḥ>*.

Of these, legend 3 is but a variety of legend 1: its transcription mechanically follows the legend as it is described in Altekar, p. 139 and ignores the revised readings—based on a superior photograph—on pp. 345–46. The three *O*'s are in fact *th*'s which with other divergences will be discussed below. If the editor had noticed Altekar's revision, he would have transcribed the legend as *prarathimatho 'tirathapravaraḥ kṣitau*.

[1] For attempts at identifying the two figures, see A. S. Altekar, *The Coinage of the Gupta Empire* (Varanasi, 1957), pp. 138–40 and 345–48 (king and queen); C. D. Chatterjee, "Gold Coins of the Standard Type (Class I) of Chandragupta II," *JNSI* 37 (1975), pp. 85–99 (Nārāyaṇa and Lakṣmī [but see p. 99, n. 1]).

[2] Nos. 1 and 2, Altekar (above, n. 1), pp. 345–48 (with pl. 19, 9 and 10); no. 3, Chatterjee (above, n. 1), p. 91 (with pl. 11, 2). I have adapted the transcriptions to western orthographical and editorial standards.

In their catalogue of the dīnāras in Bharat kala Bhavan,[3] Gupta and Srivastava state that it is "not unlikely that the two coins [nos. 1 and 2 to which no. 3 should now be added] have the same legend." This identity becomes obvious if we present the *akṣaras* stripped of editorially added vowels and supplements:

1 + 3 *prarathamathatarathapravaraḥ kṣata*[

2 *prarathamatha*[ ]*kṣatamabhipātadava*[

Noting that the sixth *akṣara, ta*, could also be *na* (see commentary below), I propose that this is an *Upagīti* line:

{*pra*} *rathamathanarathapravaraḥ kṣitim abhipātā divaṁ* [*ja*(*yati*)]

v v v v | v v - | v v - || v v vv | - - | v | - v v | -

"Distinguished with a chariot-destroying chariot, the supreme protector of the earth conquers heaven."

Commentary

{*pra*}: this may have originated as an engraver's error, perhaps a subconscious anticipation of the first syllable of *-pravaraḥ*.

ratha-mathana-ratha-pravaraḥ: the plate of obverse no. 2 shows that the second *akṣara* is clearly *tha*, and though vowel marks are not always present on the coins, nothing compels us to follow Altekar and interpret the text as *rathi(n)* "charioteer."[4] For *ratha-mathana-* "chariot-destroying," cf. *ratha-jit* "chariot-conquering" (*Ṛgveda* 9.78.4) and *ratha-reṣa* "damage done to a chariot" (*Maitrāyaṇī-Saṁhitā* 4.3.8); and for *ratha- ... -ratha-* note the adverb *rathārathi* "chariot against chariot" (*Mahābhārata* 4.1056). In *-mathana-ratha-* the third and fourth *akṣaras* are not certain. Originally Hoernle—whom Altekar initially followed[5]—read them as *bha-ga*, but Altekar later preferred *ta-ra*, noting the similarity of *bha* (𑌭) and *ta* (𑌤) in Gupta orthography and believing the next *akṣara* to be "probably a badly engraved

[3] P. L. Gupta and S. Srivastava, *Gupta Gold Coins in Bharat Kala Bhavan* (Bharat Kala Bhavan, 1981), p. 20.

[4] Altekar (above, n. 1), p. 346. When he writes that "the medial *i* mark of *thi* is fairly clear on the plate," he seems to have forgotten that he has just transcribed the *akṣara* as *tha*; what he interpets as *i* could easily be a slight defect in the flan.

[5] Altekar, p. 139.

ra."[6] However, Altekar's interpretation, *rathimatho 'tiratha-*, unfortunately will not scan as an *Upagīti*. The plate in *Gupta Empire*—that in Chatterjee (above, n. 1) is too indistinct to be of much help—suggests that *na* (꣆) instead of *bha/ta* is at least possible, and *-mathana-* results in acceptable grammar, meter, and sense. For the compound as a whole, note e.g. *dīptaśastra-pravarā* "distinguished with a shining sword" (*Harivaṃśa* 2659).

-pravaraḥ ksiti-: Hoernle had read *pravīraḥ Gupta<ḥ>* which Altekar initially adjusted to *Śrī-Chandragupta<ḥ>*,[7] until a superior photograph prompted him to suggest *pravaraḥ kṣata*. The second word he interpreted as *kṣatau* (see no. 1 above).[8] Legend 2, which guarantees the reading *pravaraḥ*, also shows that it is followed by *kṣatam* (i.e. *kṣitim*).

kṣitim abhipātā: for the syntax, see Pāṇini 2.3.69 with 3.2.135 (*kártṛ* c. accusative, as opposed to 2.3.65 *kartṛ́* c. genitive), and note *Harivaṁśa* 14931, where *pā́tā* governs *jagattrayam*.

divaṁ [ja(yati)]: faint traces of the first two *akṣaras* survive on coin 2.[9] For reasons of space, I assume that *jayati* was abbreviated, as it is the Kāca dīnāras of Samudragupta.[10]

II

The legend on the obverse of the Aśvamedha dīnāras of Kumāragupta I has so far resisted successful elucidation. Of the basis of the two specimens known to him, J. Allan conjectured that it contained *jayati divaṁ Kumāra-* and *[a]śvamedha*.[11] Later, after new examples of the type had come to light, A. S. Altekar proposed *devo jitaśatruḥ Kumāragupto 'dhirājaḥ*.[12] Even though he noted that on one specimen

[6] Altekar, p. 346.
[7] Altekar, p. 139.
[8] Altekar, p. 346.
[9] Altekar, p. 347.
[10] G. M. Browne, "New Readings of Legends on Gupta Gold Dīnāras," *AJN*[2] 5–6 (1993–94), p. 161.
[11] J. Allan, *A Catalogue of the Coins of the Gupta Empire and of Śaśāṅka, King of Gauḍa* (London, 1914), pp. cxvi, § 147, and 68–69.
[12] A. S. Altekar, *The Gupta Gold Coins in the Bayana Hoard* (Bombay, 1954), pp. cviii and 299; the transcript should read *'dhi[rājaḥ*.

"there are three illegible letters before *dava*" (which he interpreted as *devo*),[13] later treatments regarded his text as complete and ignored the unread *akṣaras*.[14]

Study of the plates in Allan and in Altekar's *Bayana Hoard* strongly suggests that Altekar's "three illegible letters before *dava*" are in fact *jayati*, as Allan had proposed, and that therefore *dava* represents not *devo* but (as expected with *jayati*) *divaṁ*. The normal order is *divaṁ jayati* at the end of an *Upagīti* line; but *jayati divaṁ* is found for example on the dīnāras of Budhagupta.[15] Altekar's *jitaśatru<ḥ>* seems securely read (with the regular omission of *visarga*), as does *Kumāragupto*, followed by *-dha* (clearly seen on Allan, pl. 12, 14); the latter can no longer come from *aśvamedha*, as Allan had thought, but most likely represents Altekar's *'dhi[rājaḥ*, or—in order to yield the expected *Upagīti* line—*'dhi[rājo 'yam*:

jayati divaṁ jitaśatru<ḥ> Kumāragupto 'dhi[rājo 'yam]

v v v v|- v v|- - ‖v - v|- - |v |- - |-

"This emperor Kumāragupta, having conquered (his enemies), conquers heaven."

For *'yam* (i.e. *ayam*), see Browne (above, n. 10), pp. 165–66.

III

In addition to metrical legends built upon *divaṁ jayati* and its congeners, the Gupta die engravers also employed shorter metrical lines in the form of nominal sentences. These latter, much less frequent than the *divaṁ-jayati* types, have not received adequate attention. So far only two examples have appeared and both are found on dīnāras of Kumāragupta I:

[13] *Bayana Hoard*, p. 299.

[14] Altekar, *Gupta Empire* (above, n. 1), pp. 200–201; Gupta—Srivastava, *Bharat Kala Bhavan* (above, n. 3), p. 21; B. Ch. Chhabra, *Catalogue of the Gupta Gold Coins of the Bayana Hoard in the National Museum* (New Delhi, 1986), p. xxxii (with some reservation); and S. R. Goyal, *An Introduction to Gupta Numismatics* (Jodhpur, 1994), p. 72.

[15] Browne (above, n. 10), pp. 164.

1. Lion-slayer type

Kumāragupto yudhi siṁhavikramaḥ[16]

v - *v*|- - *v*|*v* - *v*|- *v* -

"Kumāragupta has the valor of a lion in battle."

Allan noted that "it is probably only a coincidence that this is a Vaṁśasthavila line."[17] It is, however, noteworthy that a similar formulation, doubled, is employed in the lion-slayer dīnāras of Chandragupta II, built upon (+ *divaṁ*) *jayati*:[18]

Narendracandraḥ prathito raṇe raṇe (var. *divaṁ*)

v - *v* | - - *v* | *v* - *v*|- *v* - *v* -

jayaty-ajayyo bhuvi siṁhavikramaḥ

v - *v*| - - *v* | *v* - *v*|- *v* -

"The moon among kings, famous in battle after battle, is victorious [or, with *divaṁ*, famous in battle, conquers heaven], invincible on earth, valorous like a lion."

Especially significant is the fact that both legends have an almost identical cadence: *yudhi* / *bhuvi* } *siṁhavikramaḥ*

2. Tiger-slayer type

Śrīmāṁ[19] *vyāghrabalaparākramaḥ*

- - - | *v* *v v*|*v* - *v* | -

"The glorious one has the strength and valor of a tiger."

Although the type was known to Allan,[20] neither he nor his successors reported the fact that it exhibited the pattern of a *paṇava* line. The reluctance to regard it as such may stem from the lack of any precisely comparable schema in the two most frequently consulted ancient works on Sanskrit metrics, Kedārabhaṭṭa's *Vṛttaratnākara* and Gaṅgādāsa's *Chandomañjarī*; for in both the *paṇava* is described as - - -| *v v v*| *v* - - | -, i.e. with ninth syllable long, not short as in the coin

[16] The coins sometimes have *siṁha-* and *vikkrama-*, see Altekar (above, n. 1), p. 188, n. 3.

[17] Allan (above, n. 11), p. cxix, § 149, var. *δ*.

[18] G. M. Browne, "A Gupta Coin Legend Reconsidered," *JNSI* 51 (1989), p. 59.

[19] I.e. *śrīmān*. There is no trace of *anuṣvāra*, and the *ā* is certain, see Allan (above, n. 11), p. cxix, § 150.

[20] See preceding note.

legend.[21] But the manuscript tradition of Piṅgala's metrical treatise, the *Chandaḥsūtra*, reports that the ninth syllable may be short, and Haribhāskara's commentary on Kedārabhaṭṭa gives preference to the short form and cites the long only as a variant.[22] One might still object to interpreting the legend as a *paṇava* because in that meter the caesura (*yati*) is supposed to fall after the fifth syllable: see the *Vṛttaratnākara* and the *Chandomañjarī* (above, n. 21). But one of the examples there cited provides what appears to be an exception, comparable to what the coin legend offers: *jalpāmo jalapaṇabandhatvāt*. Here it is useful to recall Halāyudha's *Yatyupadeśopaniṣad*, which recognizes that a *yati* can occur in the middle of a word if the syllable after which it falls ends with a vowel and the next begins with a single consonant.[23] Accordingly, neither the line *jalpāmo* etc. nor the coin legend constitutes a genuine violation of the *yati*-doctrine, and so there is no compelling reason why we should not regard *śrīmāṁ* (*śrīmān*) *vyāghrabalaparākramaḥ* as a *paṇava* line. Syntactically and semantically, it invites comparison with the *Vaṁśasthavila* legend on the lion-slayer dīnāras of the same emperor (see no. 1 above): both are nominal sentences of the type subject and predicate, and both terminate with similar elements: *siṁhavikramaḥ* / *vyāghrabalaparākramaḥ*.

[21] *Vṛt.* 3.24; *Ch.* 2.10.5.

[22] A. Weber, *Ueber die Metrik der Inder: Zwei Abhandlungen* (Berlin, 1863), p. 369; the passage is Piṅgala 6.11.

[23] Weber, p. 464. Note also *taptacāmīr|karakaṭakataṭe* (| = *yati*), cited by Weber, p. 463.

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MAHMÛD IBN 'ALÎ AND THE "NEW FULÛS": LATE FOURTEENTH CENTURY MAMLUK EGYPTIAN COPPER COINAGE RECONSIDERED.

WARREN C. SCHULTZ

In comparison to other fields of medieval Islamic numismatics, the coinage of the Mamluk sultanate of Egypt and Syria (648-922/1250-1517) is well studied.[1] Balog's important corpus appeared in 1964, and has since been supplemented by numerous articles and emendations.[2] As a result, more than one thousand Mamluk coin types have been identified, with some types represented by published specimens that number in the tens or even hundreds. In addition to the rich numismatic record, those interested in Mamluk money and monetary

[1] When dual dates are given, the first represents the Muslim year, and the second the common era year. This investigation was started during the 1991 American Numismatic Society Graduate Seminar in Numismatics. I am indebted to the Society for its generous support. I thank Michael Bates, Alan Stahl, William Metcalf, and Jere Bacharach for their assistance. Any errors are of course my own.

[2] Paul Balog, *The Coinage of the Mamluk Sultans of Egypt and Syria* (New York: The American Numismatic Society, 1964). Henceforth, this work will be referred to as *CMSES*. For an extensive bibliography of works on Mamluk numismatics, see the numismatics section of the Mamluk Bibliography Project (maintained by the Middle East Documentation Center at the University of Chicago Library) on the World Wide Web at the following URL: http://www.lib.uchicago.edu/LibInfo/SourcesBySubject/MiddleEast/MamBib.html.

history have another treasure trove of sources to exploit. The Mamluk sultanate is well-recorded in historical chronicles, biographical dictionaries, and other contemporary texts. This literary source material is unparalleled in other dynasties of this era in Islamic history. Scattered throughout these works are references to monetary events.[3] When utilized with the coins themselves, these passages provide an important supplement (and check) on the numismatic record. Despite this wealth of data and accumulated research, however, there remain important areas of Mamluk monetary history that are in need of examination. In this essay, both types of sources are utilized to trace the development of Mamluk Egyptian copper coinage in the second half of the eighth/fourteenth century. For while the ninth/fifteenth century has been called an "Age of Copper" in the Mamluk domains and this assertion (along with the coins and relevant literary sources underlying it) has attracted much debate, the coins and literary sources of the preceding decades have been little studied.[4]

The last half of the eighth/fourteenth century was a period of tremendous importance in the history of the Mamluk Sultanate of Egypt and Syria It is often described as a period of decline, as the combination of recurrent epidemics of bubonic plague and internecine Mamluk warfare bled the sultanate of the supposed peace, wealth, and stability of the third reign of the sultan al-Nâsir Muhammad (709-41/1310-41).[5] The Mamluk-era chronicles are replete with accounts of the activities of Mamluks of different ages and ethnicity who switched loyalty between the numerous strongmen and sons of former rulers who struggled for control of the sultanate. This contest for power culminated in the accession of the ethnic Circassian Barqûq as sultan in 784/1382, an event often cited as a transition point in Mamluk

[3] Jere L. Bacharach, "Circassian Mamluk Historians and Their Economic Data," *JARCE* 12 (1975), pp. 75-87.

[4] On the appropriateness of the label "Age of Copper," see Bacharach, "Circassian Monetary Policy: Copper," *JESHO* 19 (1976), pp. 32-34; and Boaz Shoshan, "From Silver to Copper: Monetary Changes in Fifteenth Century Egypt," *SI* 56 (1986), pp. 109-16.

[5] For an analysis that traces Mamluk decline to the policies of this sultan, see Amalia Levanoni, *A Turning Point in Mamluk History: The Third Reign of al-Nâsir Muhammad Ibn Qalâwûn, 1310-1341* (Leiden: E. J. Brill, 1995).

history.[6] The web of intrigue and oft-changing loyalties that preceded Barqûq's rise to power was complicated, so much so that one modern observer has observed that it is "difficult to find a narrative thread that will make sense of it all."[7]

The monetary history of this era is only slightly less complex than the political. Since the beginning of their rule, the Mamluk sultans had ruled an empire in which coins of gold, silver, and copper were minted and circulated. They operated major mints in Cairo and Alexandria in Egypt, and in Damascus, Hamah, Aleppo, and Tripoli in their Syrian provinces. Both literary and numismatic evidence indicate that the issues of these mints often circulated beyond the city of origin. These same sources also show that coins of foreign origin were present in the Mamluk marketplaces. Thus, by the end of the eighth/fourteenth century, the role of the moneychanger (*sayrafî*)—whose chief responsibility was to determine value and not merely to make change—must have been a complicated one indeed.

Mamluk gold dinars were by this time minted at widely irregular weights and were probably weighed for every transaction. At the same time, Italian gold coins, based on a different metrological system than the Muslim dinars, were becoming common in the market places. It should be noted, however, that Mamluk gold issues such as the *Nâsirî*, *Mu'ayyadî*, or *Ashrafî* dinars—said to have been issued to compete with the Italian coins—did not make their appearance until the first decades of the ninth/fifteenth century. As for silver coins, it is clear that dirhams minted during the reigns of many Mamluk sultans circulated side by side, along with the odd Venetian grosso, Armenian tram, or silver coin so worn as to defy identification. The Mamluk silver coins were also increasingly irregular in weight, albeit less so than the gold dinars. While Mamluk dirhams continued to be minted

[6] Barqûq's accession marks the beginning of the second period (784-922/1382-1517) of Mamluk rule in Egypt and Syria, conventionally labeled the *Burjî* or Circassian period. The first period (648-784/1250-1382) is referred to as the *Bahrî* or Kipchaq era. For a discussion of the utility of these labels, see David Ayalon, "Bahrî Mamluks, Burjî Mamluks—Inadequate Names for the Two Reigns of the Mamluk Sultanate," *Târîh* 1 (1990), pp. 3-53.

[7] Robert Irwin, *The Middle East in the Middle Ages: The Early Mamluk Sultanate, 1250-1382* (Carbondale: Southern Illinois University Press, 1986), p. 125.

throughout the eighth/fourteenth century, the Mamluk chroniclers mention that silver periodically became scarce in the markets, and particularly so in the last decade of the century. Given the frequency with which these same sources mention the confiscation by the government of large personal hoards of dirhams, it is likely that this silver scarcity in part derived from increased thesaurization.[8]

A different situation is observed in the case of the fulûs, as the Mamluk copper coinage was called. Both the literary and the numismatic evidence indicates that the amount of fulûs in circulation in Egypt increased tremendously by the end of the eighth/fourteenth century. Contemporary observers usually saw this as an unfortunate development, as the following passage confirms. Written by the historian al-Maqrîzî (d. 845/1444), and describing events alleged to have taken place in 794/1391-92, it is both a condemnation of the proliferation of the fulûs and an indictment of the person he deemed responsible for this "evil" development:

> During the reign of the al-Zâhir Barqûq [784-801/1382-99, with a brief interregnum 791-2/1389-90], the Ustâdâr [Majordomo] Mahmûd ibn 'Alî was entrusted with the supervision of the royal treasury. He was greedy for profits and for accumulating wealth. Among his evil deeds was a large increase in the quantities of fulûs: he dispatched [his men] to Europe to import copper and secured the mint for himself in exchange for a sum of money. Under his administration fulûs were minted at the Cairo mint. He also opened a mint in Alexandria for the purpose of striking fulûs. Extremely large quantities fulûs came into the hands of the people and they circulated so widely that they became the dominant currency in the country.[9]

[8] For further analysis of Mamluk precious metal coinages during the eighth/fourteenth century, see chapter 4 of my dissertation, "Mamluk Money from Baybars to Barquq: A Study Based on the Literary Sources and the Numismatic Evidence" (University of Chicago, 1995).

[9] Al-Maqrizi, *Ighâthat al-Ummah bi-Kashf al-Ghummah* (Cairo: 1359/1940), p. 71. The translation is that of Allouche, *Mamluk Economics: A Study and Translation of Al-Maqrîzî's Ighâthah* (Salt Lake City Utah: University of Utah Press, 1994), p. 71. All subsequent passages cited from this work are taken from Allouche's translation.

In several of his other works, al-Maqrîzî added further details to his indictment of Mahmûd ibn 'Alî, among them providing a more exact date (794/1391-2) for these events and accusing him of minting copper coins that were "sub-standard" (*nâqis al-'iyâr*) or "lightweight" (*nâqisat al-wazn*).[10] In short, al-Maqrîzî placed much of the blame for Egypt's then economic troubles on the increase of copper coinage, and he placed the blame for this development at the feet of the sultan's Majordomo.

Given the frequency and occasional virulence of this author's accusations against Mahmûd ibn 'Alî, it is not surprising that they have drawn the scrutiny of modern scholars interested in Mamluk economic and monetary history, most notably Eliyahu Ashtor and Jere Bacharach. Ashtor rejected al-Maqrîzî's assessment outright, dismissing it as representing the "simplicity of the medieval mind."[11] While not denying the increase in copper coinage, Ashtor explained this development in terms of Mediterranean-wide patterns in trade, prices and bullion flow, arguing that it could not have been the result of one man's actions. Bacharach, in the earliest of his important contributions to Mamluk numismatics, warranted the charges worthy of closer examination. He carefully examined the chronicle accounts and took the important step of consulting the (limited) numismatic record available to him. This latter action was especially important in order to evaluate al-Maqrîzî's allegation that light-weight coins were produced. Ultimately, Bacharach wrote that the numismatic evidence did not support the charges made against Mahmûd ibn 'Alî.[12]

[10] Al-Maqrîzî, *Kitâb al-Sulûk li-Ma'rifat Duwal wa-al-Mulûk* (Cairo: 1934-1973), 3:774, 3:1131-32,4:306, 941-42; *idem, Kitâb al-Mawa'iz wa-al-'Itibâr bi-Dhikr al-Khitat wa-al-Athâr* (Bulaq: 1853-1854), 1:110. These events also found in al-Maqrizi's *Shudhûr al'Uqûd fi Dhikr al-Nuqûd*, edited by D. Eustache, "Études de numismatique et de metrologie musulmanes (II)," *Hesperis Tamuda* 10 (1969): 130-31, 140-41.

[11] E. Ashtor, *A Social and Economic History of the Near East in the Middle Ages*, (Berkeley: University of California Press, 1976), p. 305. This explanation is echoed by Boaz Shoshan, "From Silver to Copper: Monetary Changes in Fifteenth Century Egypt," Studia Islamica 56 (1982), pp. 159-60.

[12] Jere L. Bacharach, "A Study of the Correlation between Textual Sources and Numismatic Evidence for Mamluk Egypt and Syria, AH 784-872/1382-1468," Ph. D. Dissertation, University of Michigan, 1967, pp. 243-45.

Modern scholarship has thus been skeptical of al-Maqrîzî's accounts. It is my judgment, however, that the episode of Mahmûd ibn 'Alî and the fulûs of end of the eighth/fourteenth century must be revisited. This need for reexamination is triggered by the dramatic increase in numismatic material available from the period. When Bacharach took the important step of studying the copper coins pertinent to these events, his conclusions were based on only 102 Egyptian copper coins.[13] There are now many more to take into account. In the thirty years since Bacharach's dissertation, more than 1,500 Egyptian fulûs have been published or made accessible to study, primarily in the analyses of two sizable fulûs accumulations, one clearly a hoard, the other perhaps one.

The definite hoard was published in 1984 by Nicol and el-Nabarawy.[14] It consists of 463 copper coins, all of which were minted in Cairo, with the majority dating from the early years of the reign of the sultan al-Ashraf Sha'bân (764-78/1364-78). These coins are stored at the Egyptian National Library in Cairo. The second group of fulûs is in the collection of the American Numismatic Society. It consists of some 1,300 specimens purchased in Cairo in 1954 by George C. Miles. It was first studied by el-Nabarawy in 1981, who published his findings in 1991.[15] Unlike el-Nabarawy, I am reluctant to call this conglomeration in its present form a hoard in the technical sense of the term. While there was probably a hoard of at least several hundred eighth/fourteenth century Mamluk fulûs (of unknown provenance) at the core of Miles's purchase, it had undoubtedly been corrupted with numerous

[13] Bacharach, "A Study of the Correlation," table 38, p. 243.

[14] N. D. Nicol and R. el-Nabarawy, "A Hoard of Mamluk Copper Coins, c. 770 H. (1369 A.D.) in the Collection of the Egyptian National Library," *Journal of the American Research Center in Egypt* 21 (1984), pp. 104-18. The hoard, its provenance unknown, has a terminal date of 770/1368-1369. It is one of two large copper hoards stored at the Egyptian National Library. The other, consisting of almost 1,100 coins from the reign of Barquq and his immediate predecessor, remains, unfortunately, unpublished.

[15] R. M. el-Nabarawy, "A Hoard of Mamluk Copper Coins in the American Numismatic Society Museum," *Dirasât óthârîyah Islâmîyah* 4 (1991), pp. 25-54. Those who work in Mamluk numismatics should thank el-Nabarawy for his work of sorting and identifying these fulûs, most of which are extremely worn.

additions by the time he bought the coins. Given the extreme chronological and geographical diversity of the coins, it is likely that these items represent the contents of the seller's junk bucket into which was tossed any old copper coin or object. Examples of the latter range from a dancer's bangle to Ottoman paras congealed together and covered with a nice chocolate patina.[16] Nevertheless, the ANS accession contains over 1000 Mamluk copper coins, most of which were struck in the Cairo or Alexandria mints during the latter years of the eighth/fourteenth century.

What follows is an analysis of these and other Mamluk copper coins.[17] The numismatic evidence from these periods, when combined with the literary evidence, does much to unravel developments in Mamluk fulûs of the second half of the eighth/fourteenth century in Egypt.[18] Together, they clearly show that a major and long-lasting change in copper coinage was instituted in the year 759/1357-58. Furthermore, while it would be naïve to suggest that one man was responsible for the incredible increase in the number of copper coins in Mamluk Egypt, this comparison of coins and literary sources indicates that some aspects of al-Maqrîzî's charges against Mahmûd ibn

[16] Other oddities include an 'Abbasid fals and a fifteenth century Tuscan *quattrino* (I thank Alan Stahl, ANS Curator of Medieval Coins, for identifying the latter). There are also two counterfeits of early Mamluk dirhams, consisting of copper flans with traces of their silver coating still in evidence.

[17] In addition to the two hoards, the collections housed at the ANS, the British Museum, the Ashmolean Museum, the Israel Museum, the L. A. Mayer Institute, the Israel Antiquities Authority, the Hebrew University, and the Forschungstelle für Islamische Numismatik, Tübingen (henceforth FINT) were examined. I thank the curators of these institutions for all their assistance. Furthermore, my gratitude is also extended to the private collectors in Berlin and Tübingen who granted me access to their personal collections.

[18] For the following reasons, this study is restricted to fulûs minted in Egypt only. Mamluk copper from the Egyptian mints is better known than the Syrian issues. While there appear to be a few occasions in which the minting of Egyptian and Syrian copper coins may have been centrally coordinated, these require more study to be confirmed. In general, there are striking differences in appearance of these issues, as well as in type, metrology, frequency of issue and recall, and even in how they were valued. There are also significant differences between the series issued by the different Syrian mints. Syrian copper awaits a thorough examination.

'Alî were valid. Finally, these sources reveal that an awareness of the metrology of the Mamluk copper coins is necessary to understand how they circulated.

MAMLUK FULÛS FROM 759-793/1357-1391: THE "NEW FULÛS"

Several Mamluk sources state that a new copper coinage was issued during the second reign of the sultan al-Nâsir Hasan (748-52/1347-51 and 755-62/1354-61). The following passage is found in a lesser known work of the encyclopædist al-Qalqashandî (d. 821/1418):

> In the year 759 new fulûs were struck during the reign of al-Nâsir Hasan under the supervision of the amir Sarghitmish, the commander of the armies (*atabak al-'asâkir*). These were among the best fulûs in appearance. The weight of each fals was a *mithqâl* [and each one was valued at] one twenty-fourth (*qirât*) of a silver coin (dirham). The reason for this was that the people had become accustomed to doing business with fulûs.[19]

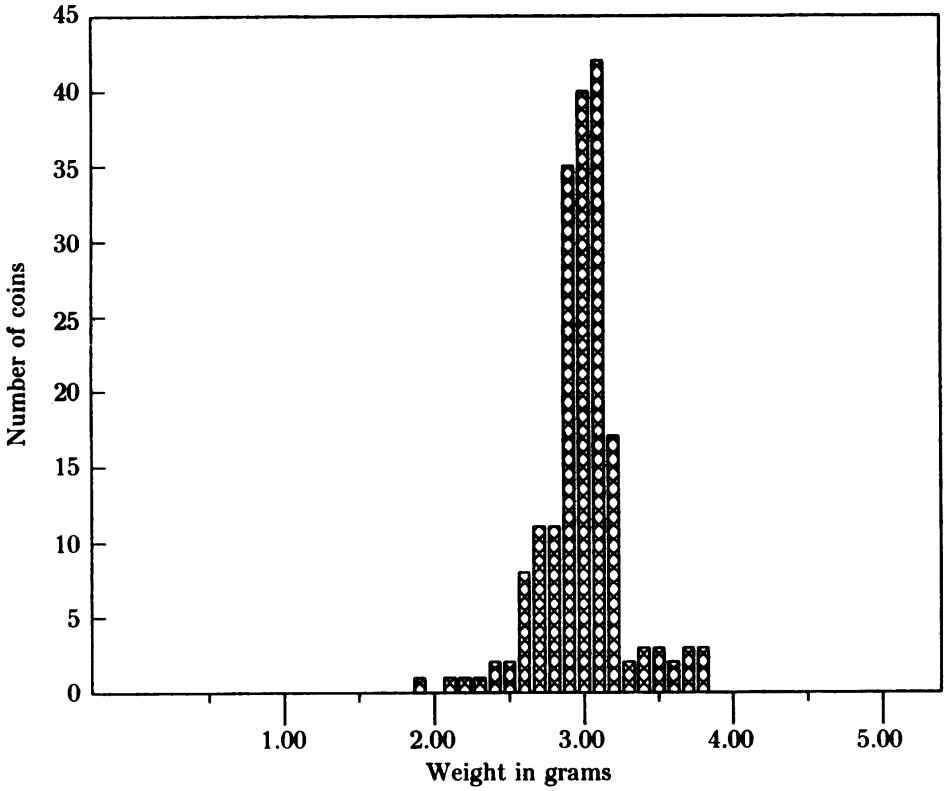
In another work, the same author wrote that these mithqâl-weight fulûs were "known as 'the new ones'" (*shuhirat bi-al-judad*)[20] While ostensibly any new coin type could be called "new," it appears that this label stuck to these coins for some time, as references to this coinage as the "new fulûs" (*fulûs al-judad*) appear for many years after 759/1357-58.[21]

[19] Al-Qalqashandî, *Ma'âthir al-Inâfah f î Ma'âlim al-Khilâfah*, edited by A. A. Faraj (Kuwait: 1964), vol. 2, p. 159. C.f. Ibn Duqmaq, *al-Jawhar al-Thamîn*, edited by S. A. 'Ashur (Mecca: n.d.), p. 399; and al-Maqrîzî, *Kitab al-Suluk*, edited by M. M. Ziyadah and S. A. 'Ashur (Cairo: 1934-73), vol. 3, p. 39.

[20] Al-Qalqashandî, *Subh al-'Asha* (Cairo: n.d.), vol. 4, p. 440.

[21] See, for example, the passage in al-Maqrîzî, *Sulûk*, vol. 4, p. 491, from the year 838 H. Hence Samuel Lachman's argument that the term *jadîd* ("a new one") as a name for copper coins in Egypt dates only from the eighteenth century must be revised. See his "The Eighteenth Century Egyptian Copper Coinage," *Spink's Numismatic Circular* (May 1978), p. 239.

Table 1
Cairo: Fulûs of al-Sâlih Ismâ'îl (745-46 H)
188 coins, average weight 3.04 g



What is significant about these accounts is their specification that the weight standard to which these new copper coins were struck was the *mithqâl*. When contrasted to earlier Mamluk Egyptian fulûs, this represents a significant increase in weight. While developments in Mamluk copper coinage from the establishment of the sultanate up to 759 H are complex and need further study, it is sufficient to mention here that by the middle of the eighth/fourteenth century (if not earlier), Mamluk Egyptian copper coins were struck to a dirham-weight standard.[22] This is illustrated by Table 1, which plots the

[22] The word *dirham* had many meanings in medieval Arabic, chief among them a generic term for a silver coin or the name of a small weight unit. Determining which usage was intended by the contemporary authors depends largely on context.

weights of 188 coins of al-Sâlih Ismâ'îl (743-74/1342-45).[23] Both the average weight of the sample and the weight interval with the highest number of specimens are slightly higher than 3.00 g. It must also be stated, however, that there is uncertainty as to just what the values of the basic weight units of the dirham and the *mithqâl* were in Mamluk Egypt. The oft-cited "classical" values of 2.97 g for the dirham and 4.25 g for the *mithqâl* are frequently assumed, but it is also clear that the medieval Islamic world witnessed a great deal of geographical and temporal variation to these values.[24] An analysis of the Mamluk numismatic evidence as it pertains to metrology suggests that in Mamluk Cairo, the dirham and *mithqâl* weighed slightly higher than the "classical" weight units, but greater precision is not possible at this time.[25]

The literary accounts of these "new fulûs" are corroborated by the surviving numismatic evidence.[26] From 759 H onwards, the copper coins bearing the name of al-Nâsir Hasan are noticeably heavier than and different in appearance from the copper coins issued under his

[23] The coins are *CMSES* type number 285-86. On the use of frequency tables, see G. F. Hill, "The Frequency Table," *NC* series 5, vol. 4 (1924), pp. 76-85. While not without its limitations, the frequency table is a basic tool of numismatic analysis. It is constructed by graphing the weights of a defined sample of coins on an axis of set weight intervals. The statistical manipulation of the data assembled for this study was done using a program published by David Sellwood, "A Basic Program for Histograms," *NC* (1980), pp. 202-4, as modified by Michael L. Bates.

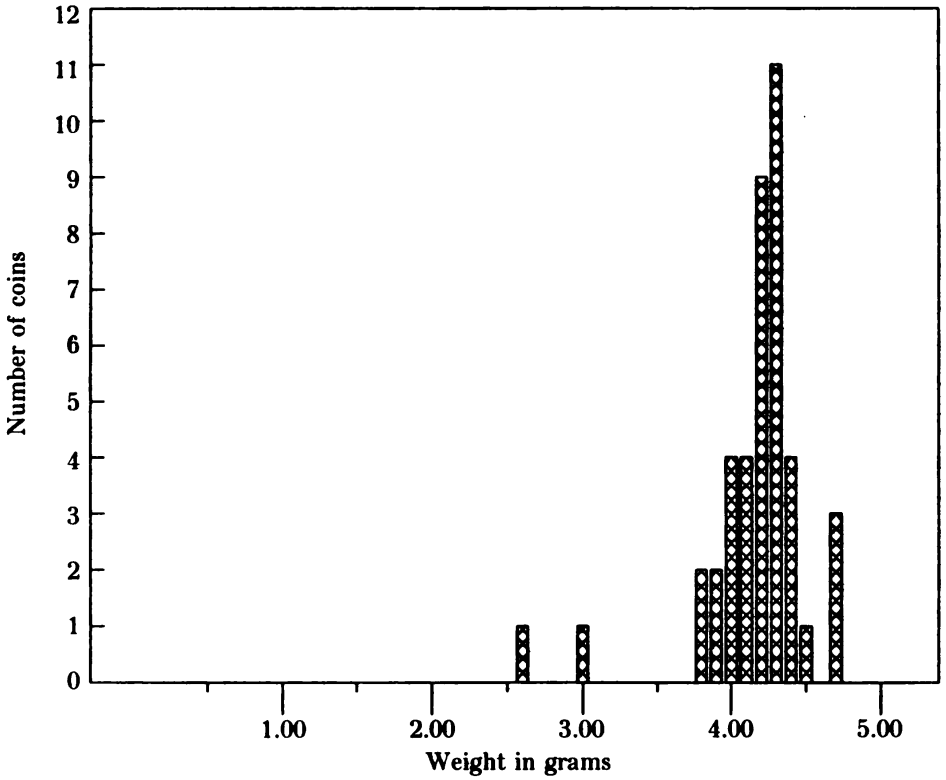
[24] Ashtor, "Levantine Weights and Standard Parcels: A Contribution to the Metrology of the Later Middle Ages," *BSOAS* 45 (1982), pp. 471-88; *idem*. "Makâyîl and Mawâzin," *EI*^{2} vol. 6, pp. 117-20.

[25] This matter is discussed in greater detail in "Mamluk Money," pp. 61-84.

[26] The earliest known specimens are listed in the *CMSES* as type number 369. Not only are there no mithqâl weight fulûs from before this date, the only copper coins positively attributed to al-Nâsir Hasan are those of 759 H. and after (*CMSES* nos. 369-72). Yet as Balog has pointed out (*CMSES*, p. 163), there exist many fulûs that bear only the title al-Malik al-Nâsir (the victorious king) without a personal name. This honorific was used by several sultans, including Hasan's father al-Nâsir Muhammad. Balog attributed these ambiguous coins to the father, since the son's "copper issues already have a different style of design," presumably referring to the post-759 coins. Yet it is possible that some of these title-only coins may date from Hasan's first reign or the early years of his second reign. Further investigation—or a lucky find of an overstrike—is required.

predecessors. Their increased weight is readily apparent in Table 2 which plots the weights of 42 coins of al-Nâsir Hasan dated 759 H. Both the average weight and the peak weight interval are more than a gram heavier than the coins plotted in Table 1. They are also easily recognizable. The obverse contains a four-line central inscription giving

Table 2
Cairo: The "New Fulûs" of al-Nâsir Hasan (759 H)
42 coins, average weight 4.20 g



the sultan's name and genealogy. This is surrounded by a linear dodekalobe in a circle of dots. The reverse contains the mint name (at first Cairo, later also Alexandria) and date in the central field inscription. This is enveloped by an eight-pointed star in a circular line, which is itself surrounded by a ring of dots. Inward pointing flowerets are located in the segments between the circle and the star. Clearly these

coins were something new. This new coin type was also long lived. With only one brief exception, from 759 H until the end of the sultanate of al-Zâhir Barqûq (d. 801/1399) coins of this design were the only fulûs minted in Egypt.[27]

The data tabulated in Tables 3 through 6 summarize the metrological information available about these coins from the date of their first issuance up to just before the alleged activities of Mahmûd b. 'Alî.[28] In each case, the coins tabulated bear the mint name of Cairo. Table 3 contains the weights of 170 specimens from the end of the second reign of al-Nâsir Hasan (759-62/1358-61); Table 4 plots the weights of 685 fulûs from the long reign of al-Ashraf Sha'bân (764-78/1363-67); Table 5 graphs the weights of 56 coins from the first reign of al-Zâhir Barqûq (784-91/1382-89); and Table 6 represents the accumulated weights of 1162 new fulûs for the period 759-93/1358-92. All of these graphs may be described as bell-shaped, suggesting that the mint prepared a specific number of flans from a given amount of copper. This is the expected result when coins were struck to a weight standard. Table 6 in particular, with its large sample size and clear peak in the range from 4.20 to 4.30 g, clearly indicates that the *mithqâl*-weight standard was maintained for Mamluk copper coins minted in Cairo for almost 35 years. Postponing to below the question as to why the Mamluk mint officials would devote such care to the maintenance of a weight standard for a fiduciary coinage, these findings refute the assertions of Balog about the metrology of Mamluk fulûs. Balog wrote that by the end of the "Bahri Dynasty," the weights of copper coins "became completely erratic."[29] Since these tables prove that the maintenance of the *mithqâl* standard was in use into the early years of the "Burji Dynasty," Balog's view must be superseded.

[27] The exception is the short-lived *uqîyah*-weight fulûs of sultan al-Sâlih Hájjî issued in 783/1381-82. For a discussion of this heavy copper issue, see Bacharach, "A Study of the Correlation," pp. 241-42.

[28] While representative of the coinage, these tables are only a portion of the available evidence. Frequency tables for the reigns of every sultan from Hasan to Barqûq are found in "Mamluk Money," pp. 165-231.

[29] *CMSES*, p. 42.

Table 3
Cairo: Fulûs of al-Nâsir Hasan (759-62 H)
170 coins, average weight 4.18 g

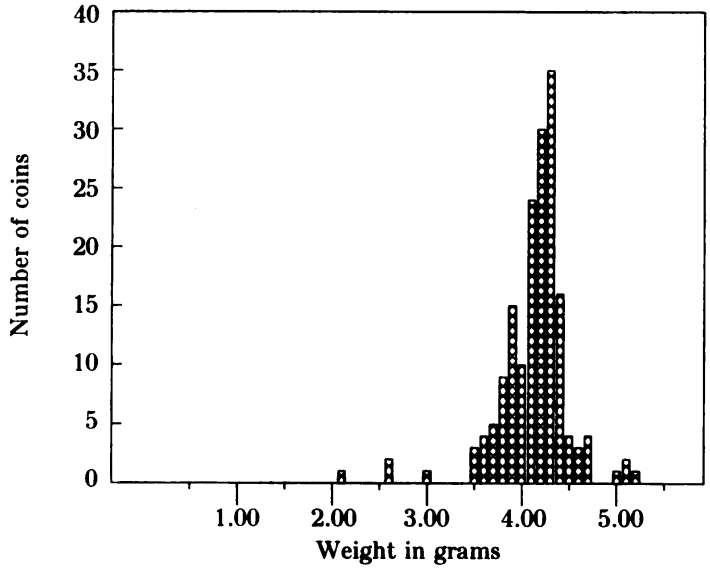


Table 4
Cairo: Fulûs of al-Ashraf Sha'bân (764-78 H)
685 coins, average weight 4.23 g

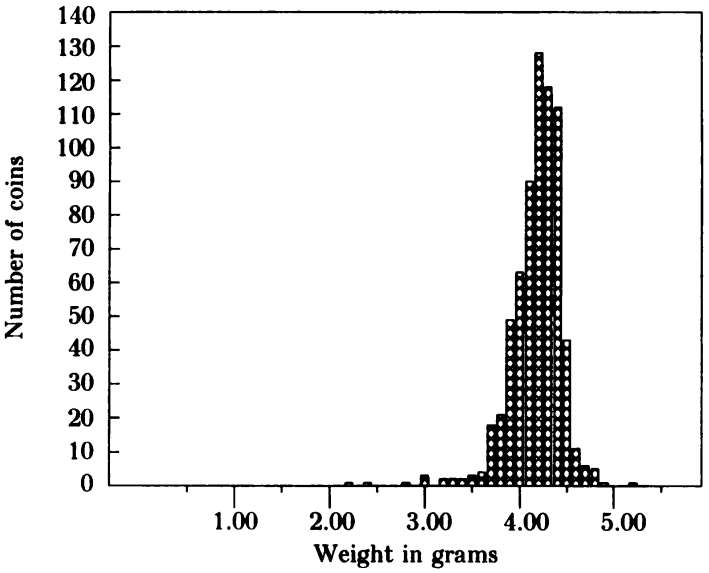


Table 5
Cairo: Fulûs of al-Zâhir Barqûq, First Reign (784-91 H)
56 coins, average weight 4.15 g

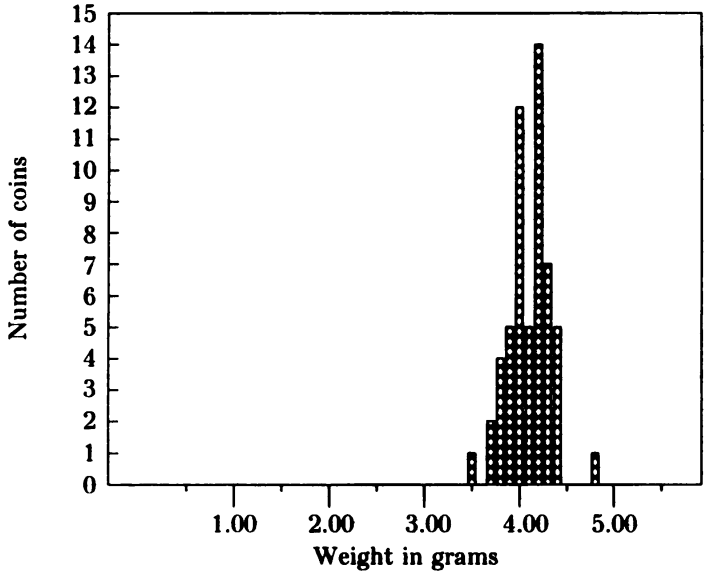
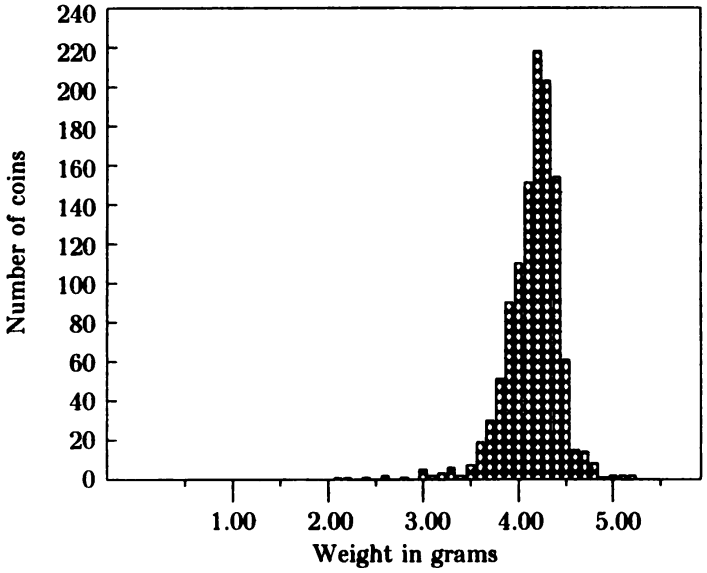


Table 6
Cairo: Combined Fulûs (759-93 H)
1,162 coins, average weight 4.20 g



All the above frequency tables were constructed using coins minted in Cairo. Before turning to the affair of Mahmûd b. 'Alî, developments in the Alexandrine fulûs must be discussed briefly. Unfortunately, monetary matters in Alexandria were mentioned with much less frequency in the contemporary texts than those in the Mamluk capital of Cairo. As a result, what is known about these copper coins is based primarily on the numismatic evidence. The earliest reference yet discovered to events before the actions of Mahmûd b. 'Alî is found in one of the works of al-Maqrîzî. It concerns events in the year 770/1368-1369. He wrote that "I myself saw the people of Alexandria pay for vegetables, citrus fruit, greens, and the like with pieces of bread, which were [even] used to buy bread. This continued until around 770."[30]

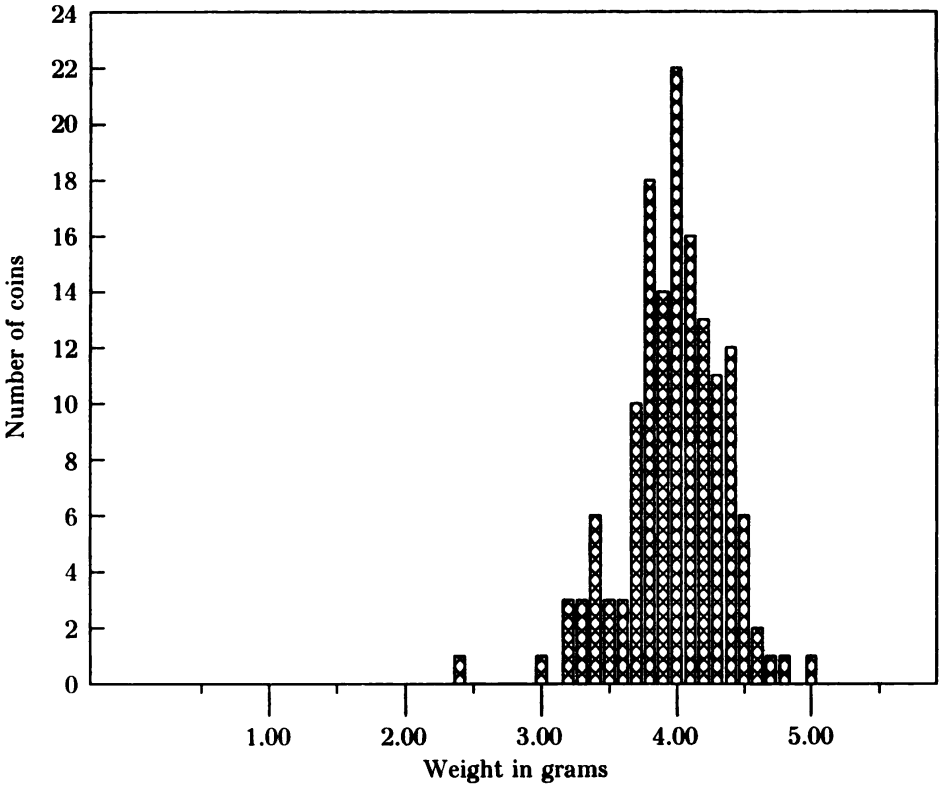
Given the context in which this autobiographical statement occurs—in a discussion of the spread of the use of fulûs—it may be safely assumed that the reason residents of this city ceased using bread pieces for petty transactions was that copper coins were introduced. This conclusion is also supported by the fact that the earliest known Mamluk fulûs of Alexandria are indeed dated 770 H, during the reign of sultan al-Ashraf Sha'bân.[31] A number of coppers bearing the name of this sultan and his successors exist, although few are published. They share the design of the Cairo fulûs, "but the style of their writing is less regular, not so harmonious."[32] The weights of 147 copper coins from the period 770-93/1368-92 are plotted in Table 7. Two observations stand out, although all conclusions must be regarded as tentative given the relatively small size of the sample. First, the distribution pattern, shape, and peak of the graph all indicate that these fulûs were struck with a weight standard in mind. In this case the Alexandrine coin sample is similar to those of Cairo, although the

[30] Al-Maqrîzî, *Ighâthah*, p. 69.

[31] See *CMSES*, type number 449. While the absence of any earlier coins may suggest that previous Mamluk sultans did not mint copper coins at Alexandria, it is risky to argue from the absence of coins alone. In this case, however, the lack of numismatic data is corroborated by the passage in al-Maqrîzî.

[32] *CMSES*, p. 219.

Table 7
Alexandria: Combined Fulûs (770-93 H)
147 coins, average weight 4.04 g



wider distribution of the former suggests that less care was taken in the adhering to that standard. Secondly, the peak interval of 4.00 to 4.09 g and the average weight of 4.04 g certainly indicate that the Alexandrine weight standard was lighter than that used in Cairo. Al-Maqrîzî did not identify the weight standard employed in the production of these coppers, but if it was the *mithqâl*, then this sample suggests that the *mithqâl* of Alexandria weighed less than the *mithqâl* of Cairo.

THE EVENTS OF 794/1391-1392

The alleged manipulation of the monetary situation in 794 H by Mahmûd b. 'Alî is frequently encountered in the Mamluk-era historical chronicles.[33] Yet it is most developed in the accounts scattered across the many works of al-Maqrîzî.[34] Those accounts may be summarized in three specific charges against the sultan's Majordomo: First, Mahmûd b. 'Alî gained control of the mints of both Alexandria and Cairo. Second, he then either sent men to Europe to buy copper or purchased the material directly from European merchants, or both. His third action was to mint light-weight copper coins, probably first at the Alexandria mint, but then possibly later in Cairo as well. Finally, al-Maqrîzî wrote that these coins caused the economic situation to worsen, contributed to the increasing scarcity of silver coins, and that the problems with the copper coinage in the early ninth/fifteenth century were said to have had their origins in these developments.

The three charges beg further scrutiny, even if definitive answers are not possible. The wider issue of the monetary events of the first decade of the following century are beyond the scope of this essay. With regards to the first allegation—that the Majordomo assumed control of the mints—it must be acknowledged that little is known about the administrative oversight of the Mamluk mints.[35] There is nothing to indicate, however, that mint supervision was ever reserved to one specific official in the Mamluk hierarchy.[36] Thus there is little reason to doubt al-Maqrîzî's assertion that Mahmûd b. 'Alî, as a favorite of the sultan, was

[33] Al-Maqrîzî was not the only contemporary observer to associate Mahmûd ibn 'Alî with copper coinage. For a discussion of the historiographical context of these events, see chapter 5 of "Mamluk Money," pp. 214-21.

[34] Al-Maqrîzî, *Ighâthah*, p. 71; *Sulûk*, vol. 3, pp. 774 and 1131-33, vol. 4, pp. 306 and 941-22; *Shudhûr*, pp. 130-31 and 140-41; *Khitat*, vol. 1, p. 110, vol. 2, p. 396.

[35] For a summary of our knowledge of Mamluk mints, see Helen W. Brown, "The Medieval Mint of Cairo: Some Aspects of Mint Organisation and Administration," in *Later Medieval Mints: Organisation, Administration, and Techniques. The Eighth Oxford Symposium on Coinage and Monetary History*, BAR International Series 389 (1988), pp. 30-38.

[36] "Mamluk Money," p. 22.

granted control of what must have been lucrative positions.[37] With regard to the second charge, barring the discovery of a contemporary shipping manifest or like source, it is impossible at this stage to corroborate al-Maqrîzî's accounts of the Majordomo's international trade in copper. Yet it must be acknowledged that such commercial activity by Mahmûd b. 'Alî could have been possible. It has been established that copper was a major Italian export to the Mamluk domains from the middle of the eighth/fourteenth century onwards.[38] Like his accuser, Mahmûd b. 'Alî may have had a medieval mind, but that does not rule out his ability to recognize profit potential in international commerce.

It is possible to move beyond speculation, however, in the matter of the third allegation. The existence of a decrease in coin weights would show up in frequency tables. For that reason the available weights of fulûs dated 794 H and after from the mint of Cairo are plotted in Table 8 and those from Alexandria in Table 9. These coins are of the same design as the pre-794 coins, and thus are not immediately distinguishable in appearance from their predecessors. It is noteworthy that both graphs exhibit a bell-shape, indicating that weight was still a factor to be considered in flan production. This suggests that any decrease would have been the result of conscious decision to produce more flans from a set amount of copper. The evidence found in these tables indicates that a weight decrease did occur in the Cairene copper, but the evidence for the Alexandrine fulûs is conflicting. For Cairo, the average weight of the sample has declined slightly (to 4.12 g, down from 4.20 in Table 6). The peak interval has also dropped, to the 4.10-4.19 range. In the case of the Alexandrine fulûs, the average has dropped below 4.00 g, the only sample measured in which this occurred. Curiously, however, the peak interval in Table 9 has increased one-tenth of a gram in comparison to table 7. More weights are needed to clarify this situation. Nevertheless, the numismatic evidence shows that modern scholars should not be so quick to dismiss the accounts of Mahmûd b. 'Alî.

[37] It is known that on occasion Mahmûd b. 'Alî provided Barqûq with large amounts of money. See W. Fischel, "Ascensus Barcoch," *Arabica* 6 (1959), pp. 166-67 and 170.

[38] The numerous works of Ashtor have established the existence of this Mediterranean commerce in copper. See, for example, his "Recent Research on Levantine Trade," *JEEH* 2 (1973), p. 201.

Table 8
Cairo: Fulûs of al-Zâhir Barqûq (794-801 H)
170 coins, average weight 4.12 g

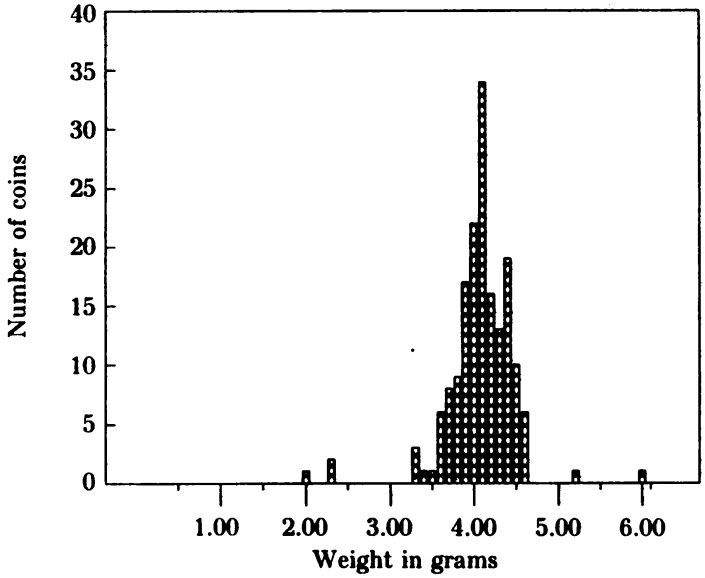
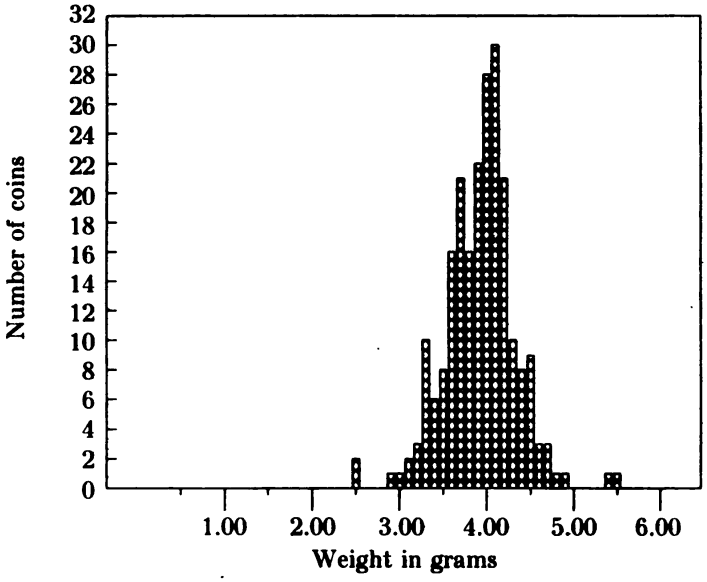


Table 9
Alexandria: Fulûs of al-Zâhir Barqûq, 794-801 H
224 coins, average weight 3.98 g



CONCLUSION

Thus the numismatic and literary evidence proves that a *mithqâl* weight copper coin was produced in Egypt from the middle of the eighth/fourteenth century until its final decade. The question remains, however, as to why the Mamluk mint officials took the trouble to issue base metal coins of low intrinsic worth to a weight standard at all. Since copper coins are assumed to operate as fiduciary money, it would be expected that their individual weights would not matter; that the sole determinant of value would be quantity. The more coins one possessed, the more money one had in one's possession. This is the normal situation expected when dealing with a fiduciary coinage. Of course the value of the coins could be lowered by a number of factors, chief among them the failure of the mint to limit the amount of fulūs produced, but in most cases it should not make a difference if some coins were heavier than others. Why then was Mamluk Egyptian copper eventually minted to a weight standard, to the dirham for part of the first 59 years of the eighth Islamic century, and to the *mithqâl* for 34 years after 759 H?

The answers to this question lie in an awareness of the ratio between the weight units in use in Mamluk Egypt and in the analysis of the exchange rates cited for fulûs. The crucial units, in increasing weight, are the dirham, the *mithqâl*, the *uqîyah*, and the *ratl*. Regardless of the exact value of these individual standards, it is known that 12 dirhams equaled an *uqîyah*, and that 144 dirhams was equivalent to one *ratl*. From exchange rates cited from the last decade of the seventh/thirteenth century onwards, it is clear that there existed a fundamental tension in the way copper coins circulated and were valued in the Mamluk-era marketplace. In 693/1293-94, for example, it took one *uqîyah*'s weight of copper coins to purchase one-quarter of a silver coin.[39] At 12 *uqîyah*s to the *ratl*, this resulted in an exchange rate of one ratl-weight of copper coins worth three silver dirhams.[40] One year later, the value of copper coins decreased to one *ratl* of copper coins

[39] Al-Suyûtî, *Husn al-Muhâdarah* (Cairo: 1904), vol. 2, p. 177.
[40] Al-Suyûtî, *Husn al-Muhâdarah*, vol. 2, p. 177; al-Maqrîzî, *Sulûk*, vol. 1, p. 810.

worth two silver dirhams. In neither of these years was the number of copper coins necessary to reach the required total weight specified. This is not surprising, since a weight standard had not yet been fixed for the copper coins. In other words, in such a situation, copper coins undoubtedly passed by tale in petty transactions. But in larger transactions, a reluctance to accept bulk quantities of this low intrinsic-value coinage meant that the fulûs traded at a discount. Thus a set weight of copper coins (regardless of total number required to reach that weight) was required to purchase silver. As a result, in larger transactions, the fulûs began to resemble precious metal coinages in that the primary determinant of value of an individual coin was their bullion content (i.e. weight), and heavier coins were favored over lighter ones. If a baker sold a loaf for one fals, for example, and then had to use a specific weight of copper coins (rather than a set number of coins) to purchase his dirhams' worth of flour and other supplies, he would be understandably reluctant to take the lighter coins for his bread, since it would take more of them to use for larger transactions.

In 695/1295-6, however, a weight standard of one dirham was set for the copper coinage, and the exchange rate of these new copper coins was set at one *ratl* of fulûs equal to two silver dirham coins.[41] This innovation must represent an attempt by the nameless officials responsible for it to ensure that the same petty coin could be used in both small and large transactions. For if the exchange rate cited is correct, the math is quite simple and the number of copper coins necessary to weigh a *ratl* would become predictable and regular. With their weight fixed at one dirham, 144 of the new copper coins would weigh a *ratl*, and collectively be worth two silver dirhams. Thus 72 of these fulûs would equal one silver coin. As long as the coins were prepared with care, as they clearly were in Table 1 above, a baker or anyone else who

[41] al-Maqrîzî, *Ighâthah*, p. 70; c.f. pp. 37-38. Unfortunately, no specimens of this issue are known today. However, the recurrent mention of dirham-weight copper coins in the first half of the eighth/fourteenth century combined with the numismatic evidence such as Table 1 above, would seem to indicate that dirham-weight fulûs were certainly the norm by the middle of the century. For a detailed discussion of this period, see "Mamluk Money," pp. 165-88.

received these copper coins in petty transactions could turn around and use them without loss for larger purchases.

The same rationale applies to the "new fulûs" of al-Nâsir Hasan and his successors. In their accounts of the 759 H issue, both al-Qalqashandî and al-Maqrîzî mentioned that 24 of these new, heavier coppers were worth one silver dirham.[42] At this exchange rate, 96 copper coins would equal 4 silver dirhams. Assuming that the Mamluk *mithqâl* was likely slightly higher than the "classical" value of 4.25 g, the total weight of these 96 copper coins would still be less than one *ratl* (with one *ratl* equivalent to 144 dirham weights, and the dirham weight unit equal to or slightly more than the "classical" 2. 97 g). This new exchange rate represented a significant increase in the value of copper vis á vis silver. (The historians also mention that there was some objection to this new exchange rate. In light of the fact that the new coinage was maintained at this *mithqâl* standard for almost 35 years, those protests must have been short-lived and unsuccessful.) It is thus easy to see why a decline in the weight of the fulûs, as Table 8 suggests took place in the last decade of the century, would cause unrest among those who used the copper coins on a regular basis. Lighter-weight coppers would trigger a return to the situation seen before the establishment of a fixed-weight copper fulûs. Those who accepted the lighter weight coins in small transactions would have been penalized in larger purchases. It would take more of these copper coins to meet the requisite weight for exchange with silver. In effect, this resulted in a devaluation of copper.

This project has been an exercise in meshing Mamluk numismatic evidence with accounts of monetary developments found in the contemporary literary texts. For the events of the second half of the eighth/fourteenth century, the degree of correlation between the two source types is remarkable. Furthermore, the frequency tables presented prove that these Mamluk copper coins were struck to a weight standard. A clear implication of both observations is that the student of Mamluk fulûs can no longer afford not to weigh them.

[42] For citations, see above, n. 20.

BOOK REVIEWS

Osmund Bopearachchi and Aman ur Rahman, *Pre-Kushana Coins in Pakistan*, published by Iftikhar Rasul IRM Associates (Pvt.) Ltd., printed by Mughal Printing & Packaging (Pvt.) Ltd., Karachi, Pakistan, 1995. 1,000 copies. No price stated.

This extensively illustrated volume deals with the earliest coins in the collection of Aman ur Rahman, a scholarly and scientifically minded numismatist who also collects engraved gems, seals, and Kharoshthi incriptions. He wisely invited Osmund Bopearachchi, the well-known expert on the numismatic history of the Graeco-Bactrians and Indo-Greeks, to collaborate in creating a volume of text and a catalogue of his extensive collection of pre-Kushana coins.

Aman ur Rahman, who lives in Islamabad, has been able to gather his specimens from local sources, including the bazaars of Peshawar where all manner of coins and antiquities have turned up in recent years. A majority of his coins appear to have come from specific hoards, particularly one from Mir Zakah in Afghanistan near the Pakistan border some 50 km northeast of Gardez. This hoard is called Mir Zakah II, since a previous one discovered in 1947 was methodically collected and published by R. Curiel and D. Schlumberger. In 1992, we are told, a second hoard was found in a well near this village and, according to reliable estimates, over 2,000 kilos or some 350,000 coins and a large assortment of antiquities in precious metal were discovered there. After mortal struggles between rival gangs claiming the treasure, it made its way to Peshawar where its choicest items were rapidly snapped up by international dealers without the slightest thought about their common provenance. Unfortunately, many of the coins were covered with black sulfide or mud, so that those eventually purchased needed extensive cleaning. The hoard appears to have been mainly comprised of Indo-Scythian coins with the latest reported of the Kushana king Vasudeva, and the earliest

from fourth century B.C. India. In all, this treasure was probably the cache of ancient looters who took advantage of a chaotic time, such as that which may have occurred in the region with the breakup of the Kaniska I dynasty, to plunder temples or palaces. In doing so they amassed what was to become the largest coin deposit ever to have been discovered to this day. Unfortunately, since the circumstances under which it was found were illicit, everything of significant value has been dispersed worldwide; and the least valuable coins may have been melted down. Of the 418 coins purchased by Aman ur Rahman, most were bought in bulk, and it was only after cleaning that 112 were found to have important unreported characteristics.

Another illicit Afghan hoard labeled Ai Khanum IV may have come from one or more finds totaling around 1,000 Greek and Graeco-Bactrian coins struck according to the Attic standard. The coin types begin with Diodotus and appear to end with Eucratides I. This group is strongly reminiscent of two hoards from Ai Khanum published in 1975 and 1980. Since the French exavation, this major Greek era city on the Oxus has been thoroughly looted in recent years, and the authors believe that this hoard comes from the same location. Rahman has in his collection 66 fine coins of this group, including one unique commemorative coin struck with the name of Antiochus II and portrait of Diodotus which strengthens the case for the gradual transition to independence by Greek Bactria under the Seleucid Antiochus II. Also of great interest are a reduced Attic standard tetradrachm with an obverse of the Parthian Mithridates I and a reverse of Euthydemus I and an extraordinary gold double stater with one side a negative and incuse image of a seated Heracles with Greek inscription and the opposite side with the same in relief. Bopearachchi argues for the genuineness of this coin, noting that it appears to have been die struck. If so, it is the only double stater known among all Graeco-Bactrian issues and may have had some special purpose, since it seems too fine to be a mere brockage. Its peculiarities have made it suspect as a modern forgery, but if Dr. Bopearachchi is correct in arguing against this, Rahman has acquired a most significant coin.

The chapter on metallurgy and cleaning processes is illuminating. Most intriguing was the collector's discovery of a number of coins that appeared to be a copper core plated with silver. This phenomenon was

confirmed by scientific tests. It is difficult to believe that the few Graeco-Bactrian and Indo-Greek specimens from this large assortment could have been official coinage, especially since silver was so readily available in the region. However, ancient forgers might have gained access to official dies and created occasional silver plated copper coins in smaller denominations that were intended to escape governmental notice. Plated silver coins purportedly of the hellenistic period are known, and, if they are genuinely ancient whether official or not, they would serve as a parallel for the coins analyzed in this volume.

Obviously, many questions arise with these discoveries that remain unanswered. Yet, for the active collector or scholar in this field of numismatics the volume is filled with valuable information and includes a thorough catalogue with fine color plates. Unfortunately, the cost of the book is very high and its availability limited. A copy has been presented to the library of the ANS.

MARTHA L. CARTER

Adriano Savio, with the collaboration of Tommaso Lucchelli and Vincenzo Cubelli, *Katalog der alexandrinischen Münzen der Sammlung Dr. Christian Friedrich August Schledehaus im Kulturgeschichtlichen Museum Osnabrück*, Band 3, *Catalogo delle monete alessandrine della collezione dott. Christian Friedrich August Schledehaus nel Kulturgeschichtliches Museum Osnabrück. Die Münzen des 3. Jahrhunderts/Monete del III secolo (Septimius Severus-Domitius Domitianus)*. Osnabrücker Kulturdenkmäler: Beiträge zur Kunst- und Kulturgeschichte der Stadt Osnabrück 7. Bramsche: Rasch Verlag, 1997. 307 pp. illus., ISBN 3-932147-27-8. No price stated.

Christian Friedrich August Schledehaus was a physician who formed an extensive collection of Alexandrian coins during the last years of his life. Here about a third of it is published, with full details and illustration. The text appears in Italian and German, while the catalogue is rendered in German only. Virtually every piece is illustrated in the margins of the pages, normally to actual size but occasionally, by error, somewhat enlarged. There are also some excellent color enlargements on pp. 34-35, which might convince the uninitiated of the

attractiveness of the series. Each reign is preceded by an introduction to the history and numismatics of the period. Except for the period of Septimius Severus and his family, not much has been written on the third-century coinage since the time of Milne, and reference is often made to comparanda from mainstream Roman coinage.

The volume, which is the first of four intended to publish the entire collection, is one of several recent catalogues devoted to Alexandrian coins, and it can no longer be claimed that scholars want for photographic documentation. We are still a long way from having a published image of every conceivable variety in the coinage (there are thousands), but one no longer needs to turn to the inadequate and somewhat haphazard plates of Dattari (*Numi Augg. Alexandrini,* Cairo, 1901) or Milne (*Catalogue of Alexandrian Coins. Ashmolean Museum,* Oxford, 1933, rpt. with addenda, 1971) in quest of a particular image.

In some respects the presentation echoes that of the very useful Cologne volumes prepared by A. Geissen (*Katalog alexandrinischer Kaisermünzen der Sammlung des Instituts für Altertumskunde der Universität zu Köln* [Papyrologia Coloniensia 5, Cologne, 1974-83]). Comparanda are cited from the Dattari and Milne works, both of which, though catalogues of single collections, are generally treated as if they provided a *corpus*. In addition there are references to Vogt's *Die alexandrinische Kaisermünzen* (Stuttgart, 1924) and the catalogues of the Hunterian and British Museum collections, which are standard and widely accessible treatments. Col. Curtis's *Tetradrachms of Roman Egypt*, a popular work but one which cites the occasional unpublished coin, can be justified on grounds of its wide availability. But Feuardent's catalogue of the DiDemetrio collection (Paris, 1872) and Mionnet's *Description* (Paris, 1813) are neither widely available nor useful, and both are replete with inaccuracies. Modern works include *SNGCopenhagen* and catalogues of the collections in Frankfurt, Milan, Grenoble, and Trier (among others) which tell the reader more about those collections than about this one, or indeed about Alexandrian coins. Moreover, the practice of multiple citation can be downright uninformative, see below no. 2290, where the description "unedierte Variante?" is accompanied by no less than 17 citations! Where will it

all end? Will the next cataloguer add the Schledehaus collection to his own list of citations?

The condition of the Schledehaus coins, at least as illustrated here, is better than average for the series, and the collection is broadly representative. In an effort to add perspective to the presentation of varieties, rarity indications are often given, but sometimes the citations themselves indicate that a coin is not as rare as the frequent use of the terms "selten" and "sehr selten" (which are not given quantitative equivalents) would suggest. For the period after A.D. 253 the reviewer has seen most of the world's major collections and offers the following observations (unless otherwise noted, the coins are described as "selten" in the catalogue).

1628, (not illus. to scale), a tetadrachm of Geta year 16, rev. Julia Domna std. l. Described as "unediert," though the coin is cited by von Sallet, Stüve, and Christiansen.

2110, Vaballathus 5/Helios. 9 other specimens known (Berlin 2, Bern, London, Oxford, New York 4).

2111, Vaballathus 5/Homonoia. 16 (Berlin 2, Copenhagen, London, New York 9, Oxford 3).

2112, Zenobia 5/Homonoia. 13 (Berlin 3, Copenhagen, Glasgow, London, Oxford, New York 4, Paris 2).

2113, ("sehr selten"), Zenobia 5 Selene. 5 (Berlin, London, New York 2, Paris)

2123, ("unedierte variante"), Aurelian 4/eagle with wreath in talons, star to l. Apparently new, 44 other specimens recorded have star to r. The meaning, if any, of the star's placement is not known. Sometimes it is regularly to r. or l. only, sometimes it varies within a reverse type without apparent system.

2124, ("sehr selten"). Apparently the fourth known, after the two cited and another in the ANS.

2134, ("sehr selten"). To the coins cited add two more in the ANS.

2136, ("unedierte variante"), Aurelian 5 with legend beginning A K Λ Δ.... There are 2 of these among the Karanis finds (43790-91) and one in the ANS.

2149, Aurelian 5, date with star in wreath. In addition to the cited coins there are five in the ANS and another in Paris.

2155, ("sehr selten") Aurelian 6/Eirene stg. l. Otherwise cited only at Mionnet supplement 613, this coin appears to be unique.

2156, ("sehr selten") Aurelian 6/Nike r. The author has missed 1 in Glasgow (Hunter 1034) and there are 3 more in the ANS.

2166, ("undediert?") Æ, Severina 6/Nike stg. l. There is another in Berlin.

2168, Severina 7/eagle l. The supposed rarity of the type is based on the legend break, for otherwise more than 30 specimens are known.

2189, Probus 2/Nike r. In fact the citations embrace the 3 other specimens known.

2235, Carinus 3/ΛΕΓ Β ΤΡΑΙ. Some 60 specimens (including those from Karanis) are known.

2243, Numerian 3/eagle l. NOVN for NOVM in obv. legend) ("undedierte Variante?"). The variety is possibly unpublished, but the sloppy letter forms of this period allow for its having been overlooked by other editors.

2290, Diocletian 7/Zeus std. l. ("unedierte Variante?"). Apparently the variety is in the combination of unadorned bust and broken legend with low-backed throne. If so it may be unique but is of little significance, as all the elements individually are abundantly attested.

2306, Diocletian 9, off. A/Elpis stg. l., date retrograde ("unedierte Variante?").

2308, Diocletian 10/Eagle r. with palm behind, citing K. 1265 ("sehr selten").

2313, Diocletian 10/Nike adv. r. (D. 5733) ("sehr selten"). Apart from Dattari 5733 this seems to be the only known specimen.

2317, Diocletian 11/Homonoia stg. l., double cornucopia. In addition to the pieces cited there are 5 in the ANS.

2326, Maximian 1/Nike r., bust laur. dr. cuir. r. seen from behind (AKMOVA-). There is another in the ANS with date LA to r.

2327, Maximian 1/Zeus stg. l. In addition to this specimen, Milan 2225. 2 more specimens in the ANS have the date retrograde.

2342, Maximian 4/Eirene stg. l., star to r. ("sehr selten"). In fact this seems to be the only known specimen, as the parallel from Dattari has star to l.

2363, Maximian 8/Alexandria stg. l. (D. 5834, K. 1334). The ANS has another with obscure exergue, 2 with A, and 3 with B. Dattari 5836 has Γ.

2376-7, Maximian 11/eagle r., date L-IA and LI-A. The 2 varieties taken together are known to me in 8 examples. The configuration of date indications does not usually vary much within single types, and when it does there seems to be no system to it. Variation certainly does not correlate with legend breaks or bust varieties.

2380, Constantius 1/Zeus bust r. ("sehr selten"). D. 6091 = Christiansen 3528 is cited as the only known example, but the ANS has 3.

2382, Constantius 2/Tyche stg. l. Officina A is cited here as if it were only known otherwise without the officina numeral, but Karanis 64600 (no palm) certainly has D and of the variety with palm the ANS has 2 with A, 2 with A or Δ, 2 with Δ, and Karanis 64599 has A or Δ.

2383, Constantius 3 Eagle l. head r., L - Δ. Obv. legend ΦΛ KωNCTANTIωCK: Possibly unique.

2384, Constantius 3/Dikaiosyne std. l. ("sehr selten"). 5 others known, in addition to Dattari, 3 ANS, Karanis 64646, Cambridge (Mossop).

2385, Constantius 3/Isis bust r. D. 6072, K. 1409.

2389, Galerius 3/eagle r., palm behind. M. 5187, Cop. 1072.

2390, Galerius 3/eagle l., wreath in beak. D. 6169 (?=London supp. 3547), K. 1432, M. 5193.

2391, Galerius 3/Elpis stg. l.: D. 6127, Ox. 5166, K. 1426.

2392, Galerius 3/Homonoia stg. L. Cf. D. 6139, M. 5185, K. 1430.

2395, Galerius 4/Tyche stg. l. ("Sehr selten"). D. 6061. In fact this seems to be the only recorded example without star.

2396-7, both coins of Domitius Domitianus are described as "sehr selten," and indeed 2398 is 1 of 4 known. There are at least 9 specimens of 2397 (ANS 3, Cologne, London, Copenhagen, Trieste, and Curtis 2137 in addition to the Osnabrück piece).

WILLIAM E. METCALF
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Coin Hoards from Roman Britain, vol. 10, edited by Roger Bland and John Orna-Ornstein. London: British Museum Press, 1997. 480 pp., 48 pls. ISBN 0-7141-0887-1. £80.

This is by far the largest volume in a series that has become more regular and more elegant with passing years. The new hoards reported

number 52, broken down by period roughly as follows: first century, 12; second century, 15; third-century denarii, 3; third-century radiates, 11; reform to A.D. 337, 4; and A.D. 337-406, 13. Once again they provide a cross section of British currency in the period of Roman control, though two are uncharacteristically early—Warminster (12 denarii down to the legionary issue of Antony, p. 30) and Raydon (5 denarii down to C L CAESARES, p. 31). There are also addenda to six hoards reported earlier, in no case adding anything of significance.

There is nothing here as large as the Normanby or Chalfont hoards that have formed the title pieces of earlier volumes, but there is a gold hoard (Didcot, pp. 91-100) of 126 aurei. The Didcot hoard is almost uncannily similar in terminal date and distribution of issues to the Corbridge hoard of 1911 (H. H. E. Craster and F. Haverfield, "Hoards of Roman Gold Coins found in Britain I. Corbridge Second Century Hoard," *NC*[4] 12 (1912) pp. 265-312). One remarkable coin here is an eastern aureus of Vespasian (30) that constitutes the first documented provenance for one of these rare coins. The authors have compared all the dies in this hoard, and while the projections of die totals are methodologically unsound (counting "singletons" is of no use where unlike coins are being compared), it is slightly surprising to find among the earlier issues even the degree of linkage that has been observed.

In addition to the hoard reports themselves, some of the studies include systematic bibliographies of like hoards, e.g. Orna-Ornstein's treatment of denarius hoards including British coinage (pp. 23-29), King's account of Æ hoards from Britain (in the context of the Race Down hoard, pp. 74-87), Cheesman's summary of radiate hoards (pp. 171-79), and Guest's treatment of the end of Roman Britain (pp. 411-23). Holmes and Hunter take the discovery of the Edston (Peeblesshire, Scotland) hoard as a point of departure for a discussion of its structure in comparison to the larger Falkirk hoard, and of these two in comparison to English Severan hoards in general (pp. 149-68).

The largest hoards are from the fourth and fifth centuries, and they raise the familiar problem of clipped siliquae, which are discussed in the context of the Bishops Cannings hoard (pp. 426-62, at 430). A somewhat unusual element of this hoard is its inclusion of both regular and barbarous radiates, as well as an irregular as of Claudius!

Cheesman's synthesis, cited above, covers the 50 radiate hoards (comprising nearly 200,000 pieces) published in the ten volumes of *CHRB* to date. His opening paragraph notes the tedium of dealing with these hoards—no doubt another ten volumes will turn up another 50 of them—and he observes, "Taken en masse, they do impart a more or less consistent sum of information, but it is information whose historical significance it is hard to assess. For that situation to change, a reliable method of translating numismatic data into historical language would have to be developed—at present an unlikely eventuality" (p. 171).

These hoards will, however, have a major role to play in any future assessment of the late third century, still one of the most intractable periods of imperial history; and the same, mutatis mutandis, can be said for other periods, particularly at the extremes of Roman occupation in the first and fifth centuries. In the meantime this volume and its predecessors stand as monuments of British industriousness and respect for the archaeological past. The finds published in the series have constituted a significant portion of all Roman hoards published since its inception, and their prompt recording stands as a model for emulation elsewhere.

William E. Metcalf
The American Numismatic Society

PLATES

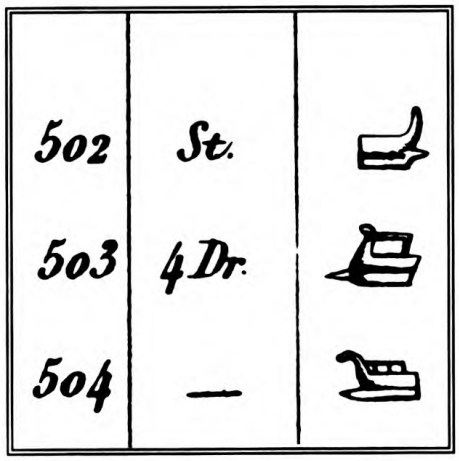
Plate 1

Plate 2

Plate 3

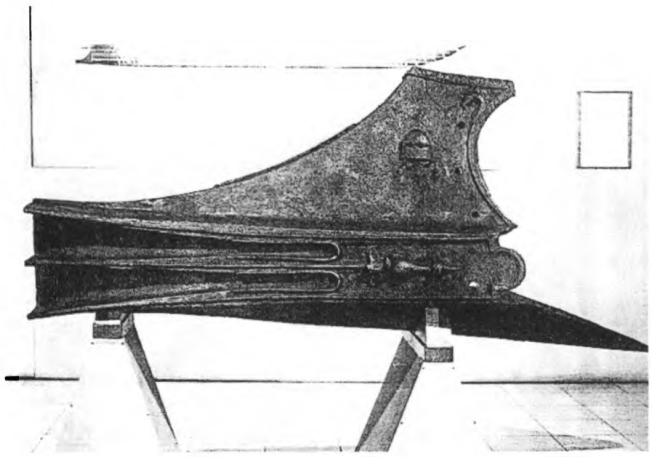
Plate 4

1

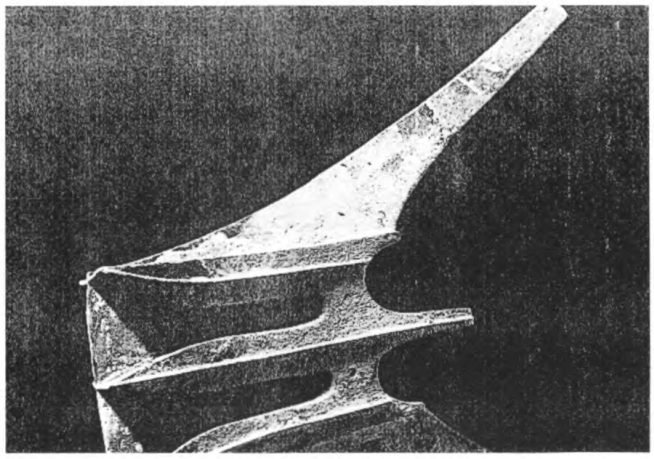


2: Muller's engraving

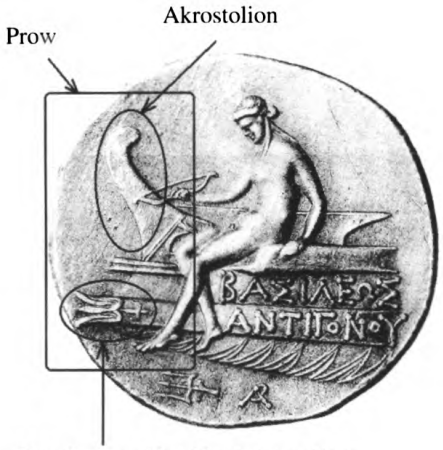
3:
Price series 3094
control mark



4: The Athlit ram,
photograph courtesy of
William M. Murray.



5: The Bramerhaven ram
at the Deutsches Schiffahrts Museum.



Naval ram with trident decoration,
usually made of cast bronze

6: Tetradrachm of Antigonus Doson

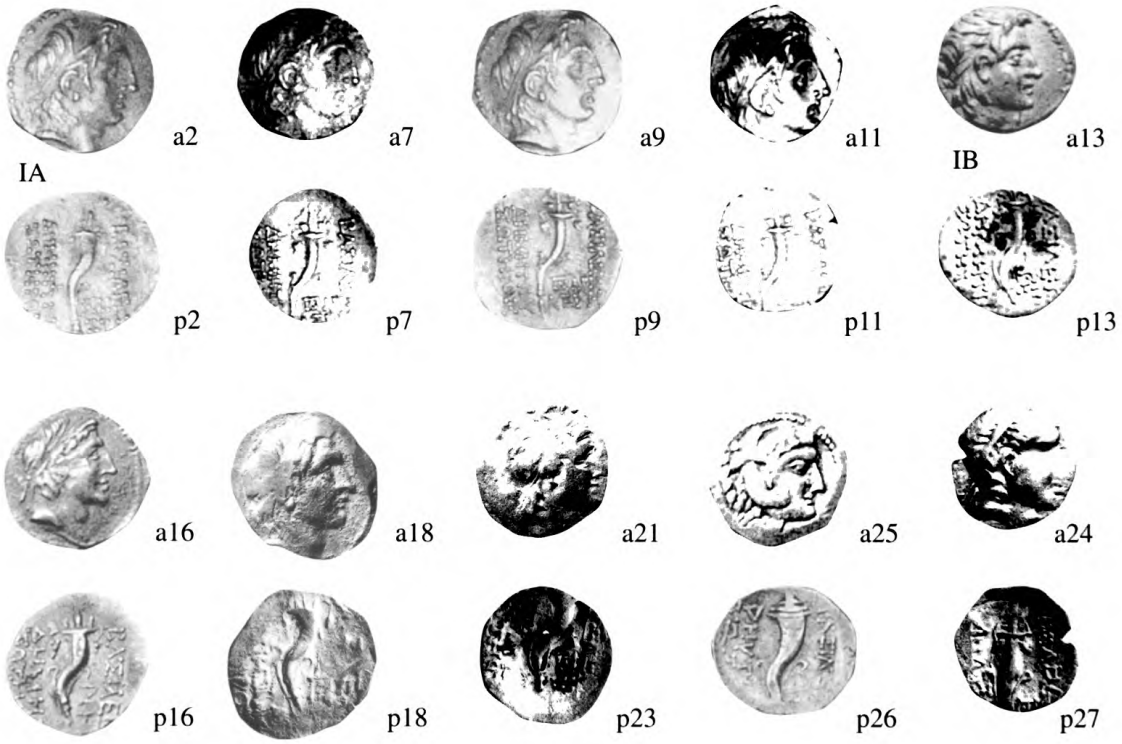
Plate 6

Plate 7

Plate 8

Plate 9

Plate 10




a26


a27

IC


a29


a1

IIA


a3


p28


p28


p30


p1


p4


a4


a1

IIB


a7


a1

IIIA


a1


p5


p8


p9


p1


p2


a6


a7


a8

IIIB


a11


a13


p9


p10


p12


p18


p20


a14

IIIC


a6

IVA


a7


a11


a12


p21


p6


p7


p9


p9

Plate 12